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Journal of the Society of Arts.

FRIDAY, JUNE 4, 1869.

Announcements by the Council.

India Committee.

On Friday evening, June 18th, the seventh conference will be held, when the subject of "Cotton Cultivation and Supply" will be discussed. The chair will be taken at 8 o'clock. Members of the Society interested in Indian questions are invited to attend.

The London Cab System.

A meeting for discussing any practical measures that may be proposed for improving the cab system in the metropolis will be held at the Society's house, on Tuesday morning next, the 8th inst, at 11 a.m. Lord Henry G. Lennox, M.P., Chairman of the Council, will preside.

Persons having proposals to lay before the meeting may obtain cards of admission on application to the Secretary.

Members of the Society interested in the subject are invited to attend.

Conversazione.

The Conversazione originally fixed for the 23rd inst. is unavoidably postponed to a later date, which will be announced as soon as the arrangements are completed.

Members Proposed.

The following additional candidates have been proposed for election as Members of the Society, and will be balloted for at a special meeting, to be held after the Annual General Meeting, on the 30th June.

Davison, James W., 36, Tavistock-place, W.C.
De Bathe, Major-General Henry Percival, 3, Morpeth-terrace, S.W.
Dennison, William, 46, West-square, Southwark, S.E.
De Vahl, Arthur D. S., 1, Hyde-park-square, W.
Fairbrother, Rev. William, Hornsey-lane, N.
Hart, Arthur Marmaduke, 15, Campbell-road, Bow-road, E.
Hay, Frederick Rudolph, 35, Mornington-road, Regent's-park, N.W.
Henderson, James, 10, Whitehall, S.W.
Lawrence, Sir Trevor, Bart., 18, Whitehall-place, S.W.
Macpherson, Charles H., 23, Kingsdown-road, Upper Holloway, N.
Maguire, Henry Carlton, 2, Hargrave-park-road, Upper Holloway, N.
Marx, Karl, Ph.D., 1, Modena-villas, Haverstock-hill, N.W.
Rawlins, Henry J. E., 99, Southampton-row, W.C.
Sassoon, R. D., 15, Leadenhall-street, E.C.

And as Honorary Corresponding Member.

Aymar-Bression, M., Directeur-Général de l'Academie Nationale, 41, Rue du Cardinal Fesch, Paris.

Proceedings of the Society.

India Committee.

The sixth conference was held on Friday, May 28th, Lord William Hay in the chair. The papers read were, on "Trade between Calcutta, Darjeeling, Bhootan, and Thibet," by Dr. Archibald Campbell, late Superintendent of Darjeeling; and on "Trade between Assam, Thibet, and Western China," by Col. Hopkinson, Commissioner of Assam. The discussion which followed was adjourned to this evening (Friday), the 4th instant. The proceedings of this conference will be given in next week's *Journal.*

PATENT LAW.

The following debate took place in the House of Commons, on Friday, the 28th ult. :—

Mr. Macfie rose to move the abolition of the patent law. The subject, he believed, had never been discussed in Parliament; it would, therefore, not be improper to devote some considerable portion of time to its introduction; but he proposed only to lay a general view of the subject before the House. In the first place, he asserted that legislation upon this subject should be based upon two principles—firstly, that the interests of inventors should not be considered before the interests of the nation at large; and, secondly, that there could be no property in ideas. The grant of a patent had always been a royal favour, and no inventor could claim as a right the exclusive privilege of manufacturing or selling any novel production he might have invented. An invention differed altogether from the literary work of an author, which he would continue to protect; and when he spoke of the interests of the nation at large, he referred to the obligation the House was under to do everything in its power to protect commercial interests from the evil consequences of the law of patent right. The present patent system differed *toto cœlo* from that which our forefathers, 250 years ago, thought tolerable. As to its inconvenience, he could produce witnesses to prove that it interfered very seriously and injuriously with trade, and one of the conditions upon which patents originally were to be granted was, that they should have no such effect. He held in his hand a paper which showed how many wrongs were inflicted by the present system on manufacturers, patentees, and vendors who were not patentees. One particular law plea in connexion with the defence of a patent had cost the parties £100,000. A Royal Commission on the subject was appointed in 1862, and their report was issued in 1865. Many eminent men were examined, and the result was that, though he believed the bulk of the Commissioners entered on the inquiry in the belief that the system could be remodelled so as to be made defensible, they ended by arriving at a very different conclusion. The report stated that the majority of the witnesses had decidedly affirmed the existence of practical inconvenience from the multiplicity of patents; and the Commissioners called special attention to the testimony given by the First Lord of the Admiralty and the various witnesses on behalf of the War Department, showing the embarrassment caused to the naval and military services by the multitude of patents taken out for inventions in use in those departments. He believed the noble chairman of that Commission (Lord Stanley) had said that, before legislating on the subject, the first duty of the house was to inquire into the policy of patents. But though five or six years had elapsed since that time, nothing had been done, and he believed the next course for the House to take was either to adopt his motion *simpliciter*, or to call upon the government to issue a Royal Commission, so that the question might no longer be postponed. There would then be an opportunity of examining some of the working men of the country, who had complained that none of their class had been called as witnesses before the Royal Commission of 1862. While, in 1650, the number of patents was naught, fifty years later it was two, fifty years afterwards seven, and so it went on until, in 1867, it was 2,292. Ireland, too, was a great sufferer by the present system, for whereas in 1800 there were only two patents in that country, now there were 2,292. That was one of the evils of the Union which he trusted that House would speedily redress. Having referred to the authority of Earl Granville, Sir James Graham, Mr. Cobden, M. Michel Chevalier, and others in support of his case, the hon. gentleman observed that the question was, whether they were to abolish patents *simpliciter*, or to adopt the system of Mr. Mill, who held that if they were to abolish patents they ought to grant compensation. There was this to be said in favour of that view, that whatever benefit was to be gained, if there was any, it would be the State, not the manufacturers, that would receive it. He begged to move, "That, in the opinion of this House, the time has arrived when the interests of trade and commerce, and the progress of the arts and sciences in this country, would be promoted by the abolition of patents for inventions."

Sir Roundell Palmer, in seconding the motion, said he had long felt convinced that this subject was one of great and growing importance, which it would be necessary at an early period to bring before the attention of the House. He rejoiced that it had been undertaken by a practical man, like the hon. member for Leith, who could speak upon it, not under the influence of any of the partial views which possibly those who looked at it from a lawyer's point of view might be thought by some to entertain, whether they were in favour of or against patents. He was glad to find that practical men like his hon. friend had arrived at conclusions which, in their broad principles, were substantially the same as those to which many members of the legal profession who had had a good deal of opportunity of observing that matter, had, in common with himself, come. He was bound to state that he thought the time had arrived rather for opening than for concluding the discussion of that subject; and, therefore, he hoped he should not be thought to do anything inconsistent with the duty he had undertaken in seconding his hon. friend's motion, when he said at once that, for his own part, he was inclined to go to the root of the matter, and abolish patents altogether, and not attempt to substitute even such a system—although it might probably be preferable in many respects to the present system—of rewards as his hon. friend had mentioned. Of course those who derived benefit—whether they were the public or were private individuals—from the discoveries that might be made, if patents ceased to exist, might always take into consideration the value they received, and pay for that benefit, as he believed the government now did, although it was not bound by patents, with respect to improvements which were useful to the public service. But that, he conceived, would be a very different thing from an organised system of rewards at all analogous to the present system of patents. He might mention, in passing, a third plan, which had found very able and authoritative advocates, and which he should also greatly prefer to the present system, although he thought total abolition would be better than that likewise. He referred to the plan of putting an end to the notion that every person who invented anything had a right to a patent, and recurring to what, he imagined, was originally the principle intended—namely, the giving of patents as a matter of grace and favour in well-selected and discriminated cases, in the exercise of a discretion by an authority entrusted with that discretion. But, as he had already said, he confessed that he himself was not for half-measures in that matter. He thought they had a right, as the motion proposed, to say that, at the period of progress in the history of the arts and of trade in this country at which they had arrived, they could do much better without these props. He called them props, because he thought they were meant to be so, but he believed that at present they were nothing but obstructions and hindrances to trade and the arts. Let him, in the first place, notice the principle on which the patent law was generally supported. Some persons imagined that there was a sort of either moral or natural right in inventors to some such protection as was given by patents, and the principle was sometimes expressed in this way, that a man had a right to the fruit of his brain. Now, he held that invention and discovery were essentially unlike copyright. Copyright applied to a creation. A man wrote a book; he thus brought into existence something which had no existence in the nature of things before. The rest of the world were not in the race with him to write that particular book. But in the case of inventions and discoveries, the facts with which they were concerned lay in nature itself, and all mankind who were engaged in pursuits which gave them an interest in the investigation, for practical purposes, of the laws of nature, had an equal right of access to the knowledge of those laws, and might be equally in the track for obtaining it. All who were engaged in particular arts and manufactures were actually upon the track which led to the discovery of those laws, and the knowledge of them was the common stock and property of all mankind who were equally in pursuit of it. He could not allow that the man who was first in the race of discovery could claim, for 14 years or any other term, an exclusive property in a portion of the common stock of knowledge which was accessible to all who used the proper means of discovering it. It could not be said that, on considerations of public advantage and expediency, the man who made the first discovery of a law of nature, or the right mode of applying it, had an exclusive right to apply that discovery for a certain period. It was said that patents were useful to the public, either as stimulating invention or as insuring the publication of useful discoveries; and he did not venture to say that the time might not have been when they answered both of those purposes. Bounties and premiums might be adapted to a rude state of the arts, and an early stage in the progress of commerce, but when a nation had reached so high a degree of progress in all ingenious arts and discoveries, and in trade and commerce, as we had, he thought that in this department as well as in others, the system of bounties and premiums was much more likely to be mischievous than useful. But of course one could not demonstrate that point by resting merely on an abstract proposition, and therefore he would ask the House to look at two or three things which it seemed to him would put the matter in a strong practical light. Patents might be divided into those which might be popularly called meritorious, and those which were not meritorious. The former class were certainly not one in a hundred of the total number of patents, and the latter class were very numerous in every year. How, then, did the system work as regarded meritorious patents? He supposed it would be admitted that among the most meritorious discoveries of recent times were the steam-engine, the electric telegraph, and the screw propeller for ships. These cases furnished excellent illustrations of the way in which the patent system worked. Take the electric telegraph. According to the evidence on the subject, it was not possible, even for those who best understood the matter, to say who was entitled to the merit of that invention, so gradual and imperceptible was the natural growth and progress of knowledge and discovery in reference to it. But about 400 or 500 patents had been taken out as marking different steps in the investigation of that subject. As to the screw-propeller, he had seen a book which represented the collected patents of one company as being 90 or 100; and he understood that the case was very much the same in regard to the steam-engine. They were not dealing, in the case of the most meritorious inventions, with a true discovery by a single inventor, but with an important branch of practical knowledge at which many men were working at the same time, and in regard to which each step attained indicated the next step that was to follow, and many persons together were on the road. Well, but if they were on the road, the public would get the benefit of the discovery, and the question was whether, by enabling each person on the road to stop up the road at his particular point, they were not really retarding the progress of discovery, and throwing difficulties in the way of even the most valuable inventions. There was no one better acquainted with that subject than a friend of his—a gentleman very eminent both in science and in the law. He meant Mr. Grove; and those members of the legal profession who had to encounter Mr. Grove in a patent case knew they had a very difficult task indeed before them. Now, here were the words of Mr. Grove in reference to that subject:—"Always when a discovery has been made, when the public has reaped the fruits of it, there is no case, and never was a case, either in the history of pure science or in the history of practical discovery, where it is not alleged, 'If you look at such a book and such another book, you will find that so and so has been done, and you will find that it has been anticipated.' That is partly true and partly false. There are in all such cases approximate anticipations. The difference is, that one man gets at the points, hits the real thing which will do it, and the reason why it will; whereas other people, although they may have got the thing, have not acquired an accurate knowledge which will enable them with certainty to produce it." That showed the House that the race was often so close that even the man who had hit the thing might be shut out by somebody else who did it a trifle better. Nothing could be more true than that. Would the House allow him to quote the example of a very important patent, which he thought would make the matter clear, and indicate how much they might lose by a system of that description. For a very long time the distillation of oils from shale and coal had been a matter of the common knowledge—aye, and of the common practice, of mankind. Early in the present, or towards the end of the last century, it was practised by means precisely similar in all points to those which the present patentees used in this country. But it was not known commercially that there was such a thing as paraffin, nor was it known commercially how to distil it. The oil was, indeed, obtained in a rough way, and without that nicety of discrimination which afterwards resulted from scientific knowledge of the article itself. All chemists knew that in order to distill these oils it was necessary to keep the temperature as low as possible. This was the state of knowledge when a great German chemist discovered that by operating on wood, tar, and other substances, he could produce paraffin in small quantities. He also said it could be got from coals in precisely the same way, as was subsequently done by patentees in this country. But still the German chemist's experiments were of a scientific and not of a commercial character. He neither produced it commercially, nor did he hit upon the material from which it could be commercially produced. The same oil could be produced from shale. Only the other day there was discovered in Scotland a new kind of mineral, as to which the scientific world were at variance whether it was coal or shale. Patents had been already taken out for distilling oil from shale, and, therefore, if the newly-discovered substance were shale, oil could not be obtained from it without an infringement of those patents. But a patent was taken out by a gentleman, who stated that his object was to use bituminous coals for the purpose of distilling paraffin. In point of fact, he hit upon a mineral which was in *ambiguum* whether it was coal or shale, but which the authorities ultimately pronounced to be coal. From this substance the oil could be produced in large quantities. This gentleman took out his patent, notwithstanding all the previous knowledge on the subject, and notwithstanding the fact to which the learned judge, who decided the case in one of its branches, referred, in the following terms:—"There is ample evidence that the attention of practical chemists was, previously to the date of Young's patent, laboriously directed to discover the proper material and the proper means of producing these articles in sufficiently large quantities for common purposes." The public literally had in their hands all the necessary elements of knowledge belonging to the subject, and yet the first person who found that this particular coal was more bituminous than others excluded the rest of the world from that manufacture for fourteen years, and of course amassed a large fortune. Substantially, the test in the courts of law was whether a man had made money and brought the manufacture into use. If so, the courts assumed that all previous knowledge was inadequate and useless, and the man who was successful in the manufacture was regarded as the discoverer. Was it not quite clear, however, that the public were so far on the road to this discovery that it would have assuredly been found out and enjoyed by the public at large if the path had not been obstructed by the patent? He would now mention another case. In the days of our youth mills were much infested with flour flying about in them. All the millers, both in this country and abroad, wanted to get rid of this nuisance, and they were possessed of the scientific principle and the mechanical means by which this desirable object would be accomplished. They tried experiments with fans, which created a draught to draw the air from the millstones, and everything depended on the adjustment of a plan to draw just sufficient air and no more. People were actually on the road, and were doing the thing in an imperfect way, but in such a way that, if they had continued after the granting of the patent, would have made them infringers of it. But the man who proposed to do just enough, and no more, was held to be entitled to a patent, whereupon all the millers in England combined to go into litigation in order to defend themselves. Lawsuits of the most enormous and oppressive magnitude resulted, simply from the circumstance that a man had been allowed to step in and prevent the millers from carrying on their business in the best way. That they would have found it out was certain. That was certainly the impression on his mind. He thought it was almost certain that the discovery, being in the direction of their necessity, and depending on the application of a known principle and of known mechanical means, was a discovery which could not in the course of nature have been long delayed. Having said thus much about those patents which were meritorious, he would make a few remarks on those which were not. A great number of patents were simply frivolous, and related to practical nothings, but still nothings affecting trades, and standing like lions in the path to frighten tradespeople, and to expose them to risk, litigation, and annoyance if they manufactured those articles which they ought to be at liberty to manufacture. Then there were other patents of a less frivolous nature; they related to some little combination of a kind which really was so plainly in the open path, that everybody ought to be at liberty to use it. These, however, furnished the staple of the great majority of patents, which, though they did no practical good, operated to a great extent in hindering subsequent inventors in effecting further improvements, because these patents covered almost the whole ground of everything that could be possibly done. An inventor, unless he paid a tax to the owners of prior useless patents, was exposed to litigation, and even if he were willing to pay the tax, the owners of the prior useless patent might refuse to grant him a licence. Thus, for the space of fourteen years, these useless patents might not only do no good to the public, but might actually stop the road to all further improvement during that long period. On this subject evidence had been given by three persons of eminence—Mr. Scott Russell, Sir William Armstrong, and Mr. Platt. These gentlemen agreed in saying that the useless patents to which he had just referred were a practical nuisance, and it was obvious from their number that they must be a very great nuisance. Mr. Scott Russell said:—"There are a great many patents of this kind (practically useless, but not appearing so on the face of them) taken out for boilers of steam-engines, and boilers of steam-engines admit of very enormous variety of shape and proportions, without damaging their efficiency. The consequence is, that it is hardly possible at this moment for a man having to scheme a boiler for a new situation or new circumstances to avoid putting his foot, in so doing, into a trap which somebody has previously set for boilers. . . Nearly the whole of the patents for the boilers of steam-engines at this moment are of no practical value to inventors or to the public; but they are continually getting every man who makes a boiler into a scrape with some patentee, because almost every conceivable form of boiler having been previously patented, and bit of a boiler, one cannot make any sort of boiler without infringing some man's patent." He said precisely the same thing of screws. Then Mr. Platt, a well-known machine-maker, said:—"I think that there is scarcely a week, certainly not a month, that passes, but what we have a notice of some kind or other of things that we have never heard of in any way, and do not know of in the least, that we are infringing upon them; and the difficulty is to get at any knowledge. We may be now infringing, and may have been infringing for years, and a person may have been watching us all the time, and when he thinks that we have made a sufficient number he may come down upon us, and there is no record. If a thing is entirely new, there is a record by getting a description; but what I mean by a description is this—a very large number of patents are now taken out for what is termed a combination of known things for the same purpose, and the descriptions of those patents are generally so bad, that it is impossible to tell the parts that are actually patented. It is only when you come into court, or after making some compromise rather than go to that expense, that you ascertain that fact, and very likely they themselves in many cases do not know the parts that they have actually claimed. It appears to me that, as to that question of combination, the granting of patents for things to do precisely the same work in the same machine, with the addition, perhaps, of a chain or a couple of bolts, or the form of the lever changed, a straight lever made into a compound one, in matters of that kind it has become a very serious question as to conducting a large business." These were examples which it would be very easy indeed to multiply, and if the objections he had urged against the meritorious patents were well founded, what could be said in favour of the large proportion of patents which were simply obstructing the trade and commerce of the country? Could any one doubt that, in this advanced era of knowledge, the public would gain, on the whole, by the abolition of the patent laws? Before he left that part of the subject, he wished to mention one very pregnant fact. There was in this country a powerful consumer—he meant the government—which, with respect to fire-arms, cannon, ships, and things of that sort, would be placed in a very singular position indeed if it were subject to the patent laws. During the time he had the honour of being a law-officer of the Crown, an extensive war was, as the House was aware, unfortunately raging, and a large number of patents had come under his consideration, in connexion with so-called improvements in ordnance and ships. It would be seen from the evidence to which his hon. friend had referred, that the authorities at the War-office and the Admiralty had patentees swarming like hornets about their ears, and that the public service seemed, in consequence, likely to be obstructed to a very inconvenient extent. The question was then tried whether the Crown was bound by patents at all, and a decision was obtained to the effect that it was not. But, while the Crown was free, it should be remembered that the people at large were subject to the law as it stood, and if in the case of the government the claims of patentees were found to be monstrously inconvenient, it might not be difficult to believe that they operated in the same way in the case of the rest of the world also. He should not enter into the minor details of the improvements which had been recommended by the Commission, but there was another point to which he wished briefly to advert before he sat down; he alluded to the question of the protection of the public against invalid and bad patents. The whole argument in favour of patents proceeded on the supposition that the public were likely to be really benefited by some discovery which was worth the price of all the inconvenience and obstruction to which they were exposed under the present system. But if they said that they gained nothing by the patent, and that they only wanted to be set free, what was the position in which they stood in reference to the cardinal point of protection against bad patents? Was there really any protection in that respect in the duties which were discharged by the law-officers of the Crown? It was impossible for the law-officers of the Crown, acting on the mere statement of the patentee, to know with certainty whether a so-called discovery was new or not. They could only examine into the question whether an alleged invention, as described on the face of it, was or was not satisfactory; but they could in no way protect the public against having an old thing put forward as a new, or a useless as a useful invention. Indeed, the attempt by means of any sort of preliminary investigation to establish the utility or inutility of a patent must, in his opinion, necessarily fail, so long as the granting of patents was a matter of right and not of discretion. And what was the result when a patent came to be disputed in a court of law? Everybody was aware that such litigation had acquired a reputation infamous beyond every other. In the Paraffin Oil Company's case, which had been referred to, the time occupied before Vice-Chancellor Stuart was not less than thirty whole days. Why was so large an amount of time consumed in those cases? Because it was necessary to enter into the whole history of the discovery in all its numerous stages, and to beat up witnesses all over the country, so that a voluminous mass of scientific evidence had to be produced. That was the reason why the expense in those cases was so enormous, while the public were, in every point of view, placed at an immense disadvantage, for the presumption was in favour of the patentee, who, if he happened to have succeeded in an action against another person, was entitled to have the fact put in evidence in the case, and might subject his opponent to extra costs. But that was not all. In a case, he believed, of a patent for the purifying of gas by the use of metallic oxide of iron, it came out that there were two kinds of oxide, the hydrous and the anhydrous, and that the one would effect the object while the other would not; but, because the terms were general, although everybody who tried the experiment might arrive at the result desired, the patent was held to be bad, and another person who took out a patent for the hydrate had his patent made good. Lord Westbury, who was as well acquainted with the subject as anybody who had in recent times occupied the woolsack, said, in 1862, in speaking on that point:—"To vitiate a patent by prior publication, whether in a prior specification or in a published book, &c., the antecedent statement must be such that a person of ordinary knowledge of the subject would at once perceive, understand, and be able practically to apply the discovery without the necessity of making further experiments, and made useful. If anything remains to be ascertained which is necessary for the useful application of the discovery, that affords sufficient room for another valid patent." It would be seen, he thought, from what he had stated, that the public were placed at a great disadvantage in the contest. In dealing with patent cases in a court of law, there was generally a vast array of witnesses to be examined, consisting of mechanics, chemists, and scientific men of all sorts, on one side and the other. Then there were the jury, who knew nothing of the subject, and the judge, who was placed in a worse position, because he imagined he understood all about it when he did not. He did not, of course, mean to say that the judge did not sometimes understand it, but it might very easily happen that an ingenious professional witness might so argue the case, under the form of giving evidence, as to lead the judge to think that he really knew all about it, when such was not in reality the fact. Then the bias being in favour of the patentee, the result of such trials almost invariably was, that if the matter happened to be of any practical importance, the public were defeated, after having endeavoured to protect themselves at an enormous expense. He would not enter into minute details, but probably he had said enough to show that a great practical evil arose out of patent laws, and that for this evil there was little or no corresponding benefit. He did not think that we should lose really valuable discoveries if the patent laws were abolished. There might be some rare instances in which particular circumstances might give to particular inventors motives for suppressing and facilities for suppressing discoveries which were not patented. But, assuming that to be possible in some cases, it operated even now, for it was well known that patents were bought up for the purpose of being suppressed, and it was understood also that inventors were the persons who derived the least advantage from their inventions. His conclusion, therefore, upon the whole mattter was that the time had at last arrived—even if it had not arrived some time ago—at which the public interest would be promoted by the entire abolition of the present system of monopoly.

Lord STANLEY said that, agreeing substantially in the arguments of the hon. and learned gentleman who had just sat down, he should not have troubled the House if it had not been for the circumstance that he was chairman of the Royal Commission which sat upon the question of the administration of the patent law some years ago, and he thought, therefore, that it might be expedient he should state what was the result which that inquiry produced upon his mind. There was no doubt that, quite apart from the principle of the law, the details of the law, as at present administered, were not satisfactory; and, if the law were to continue in any form, he believed that, in the report of that Commission various suggestions would be found, by which the most prominent objections might be removed, and fair trial might be given to the principle itself. But it was impossible to carry on an inquiry of that kind, even limited as it was—it was impossible, at least for him, and he believed he was not the only one in that position—without finding a doubt raised in one's mind whether any patent law could be framed in such a manner as not, upon the whole, upon the balance of good and evil, to do more harm than good. That conclusion, he was bound to say, was totally opposed to his earliest impressions upon the subject. He resisted it for some time, but the more he had to look into this matter—the more he had to consider how great were the practical abuses and inconveniences of the existing system, and how difficult it would be to remedy them—the more clearly it appeared to him that the evil was really irremediable, being inherent in the principle itself. On this subject of patents there had been a certain amount of prejudice, particularly in the minds of literary men, who appeared to think that copyright was only a modification of the same principle, and that if patents were abolished copyright would follow. The analogy seemed a plausible one, but he thought that, on being looked into, it would not hold water. The difference was simply this. He did not rest it on any abstract ground as to the distinction between invention and discovery, but on the obvious fact that no two men ever did or ever would write, independently of one another, exactly the same book; each book, be it good or bad' would stand alone; whereas it might happen, and often did happen, that two or three men, quite independently of one another, would hit upon the same invention. That alone established a distinction between the two cases. He was not disposed to place the objection which he entertained to the system of patents upon the ground of any abstract impropriety in giving a man a property in ideas. To a certain extent you did, in the case of copyright, recognise a certain qualified and temporary property in ideas; and if it could be shown that a man's ideas had been of a nature to add greatly to the wealth of the country, he did not think that any abstract conditions of the kind mentioned by the hon. member (Mr. Macfie) would induce anybody to grudge to such a man any reward to which he might fairly be entitled, provided that that reward could be given in a manner free from objection on other grounds. The objections which he felt to the principle of patents were threefold. In the first place, you can hardly ever secure the reward *going to the right* man. In the next place, you could not establish any proportion between the public service rendered, and the value of the reward received nominally for that service. And, thirdly, you could not, by any arrangement that he had been able to discover, prevent very great inconvenience and injury being inflicted upon third parties. With regard to the first point—the difficulty of securing that the reward should go to the right man—it must be remembered that a patent did not, as some people supposed, bring to the holder of it an immediate pecuniary right. All that it did was to give him a right to prevent any one else from using his invention without paying for it, and if that patent were infringed he was entitled to take legal proceedings. But everybody knew that the law was costly, and that patent suits were the most costly of all. It was notorious that patents were continually infringed by persons who well knew they were infringing them, but relied upon the inability of the inventor to incur the expense of defending his property. If a poor inventor took out a patent, and the patent promised to be productive, in nine cases out of ten he *was obliged* to sell it to some one who could command capital enough to defend it in a court of law. If the patent remained in his own hands, it was quite sure to be infringed, and then he would probably be crushed by the law expenses. He did not know whether it would be possible to obtain accurate information upon this point, but he really did not think he should be exaggerating if he said that, in nine cases out of ten—probably in 99 out of 100—the reward was obtained, not by inventors or their representatives, but by persons who had bought the patent on speculation, and at a very low rate. He said at a low rate, because there was a great deal of uncertainty about such property, and until a patent was tested by actual working, you could hardly say whether it was valuable or not. What was the practical effect of this? Why, that a few great firms in any branch of business, buying up at a low rate any new patent applicable to their business, and prepared to fight for it, could so hamper other competitors as to secure a practical monopoly. The reward, therefore, did not, as a rule, go to the men who, on the ground of *the public service* rendered by them, were intended to receive it. As to the second point—that the reward might be great and the public service very small—that had been dwelt upon by the hon. and learned gentleman opposite, and little need be added to what had been said by him. The merit and novelty of the invention might in many cases be almost nothing, and yet, however obvious it might be, however much it might lie, so to speak, in the high road of discovery, if it applied to any article of general use, the pecuniary reward derived from it might be absolutely out of proportion to the novelty or value of the invention. It would be easy to give instances, but he apprehended that the fact was familiar to everyone who had studied this question. Then, with regard to the injury to third parties, it commonly happened that half-a-dozen men who were competing in the same line of business were upon the track of the same discovery. Each of these half-a-dozen men would probably have hit upon the invention which was wanted, independently and without communication with the other. But the first who hit upon it, and who took out a patent for it, was thereby entitled to exclude the general public and competitors from the use of that which, if he had never existed, they would probably have hit upon within a few weeks. A and B reached the same point, and one a week or a fortnight before the other, and A became entitled, perhaps by accident, to exclude B from a process which, a little later on, B would have hit upon for himself. Another case was that where the successful working of a process depended not upon one but upon several successive inventions. The first two or three, not leading to any immediate practical result, might not have been thought worth patenting. The last link in the chain gave to the whole their commercial value, and it was the person who took out the patent for the last invention who got the benefit of the whole, yet it might not be the most important invention in the series. He would say nothing of the inconvenience and prejudice to manufacturers in general. That was obvious enough, and the question was whether there was any counterbalancing advantage. These were the considerations which led him to the conclusion that it was impossible to defend our system of patent law as it stood. At the same time, he did not at all disguise from the House that there were certain inconveniences and difficulties in the way of abolishing patents altogether. You had to guard, in the first place, against the danger of encouraging inventors to keep their discoveries entirely to themselves. In some branches of business no doubt that would be possible, and the obvious effect might be to shut out the public, for a much longer period than would be the case if patents were allowed, from the use of some valuable invention. Then, it had been suggested by the hon. member who raised this debate that there might be a system of State rewards for the encouragement of really meritorious inventions. Without putting an absolute negative on that plan, he must observe that it was one which could only be established at great cost, and it would be a very difficult thing to apportion among inventors the rewards to which they might think themselves entitled. The distribution of the rewards would give rise to endless complaints, and would occasion, however unjustly, suspicions of jobbing and partiality. With regard to the suggestion thrown out by the hon. and learned gentleman, of the possibility of granting patents, not as a right, but as matter of discretion only, in certain limited and important cases, the Select Committee considered that point, and he was bound to say that the difficulty of carrying it out appeared to his mind almost insuperable. There would be found great difficulty in drawing the line, and it would not be an easy matter for anyone to exercise so large a discretionary power as to decide to what inventions patents should or not be granted. He did not know what tribunal would be fit to exercise so great an authority, and he was sure that none would be able to exercise it in a manner to give satisfaction to the public. The most fit persons to decide in such a case would, seeing the difficulty of the task, be sure to decline to undertake the duty. Under these circumstances it appeared that they were landed in great embarrassment. He was convinced that the patent laws did more harm than good, and if called on to say aye or no as to their continuance, he should certainly give his vote against them; but, as this was a matter which required a particular handling, he should be content to leave the question in the hands of the government, and he thought it was well worth consideration whether they could not, starting on the ground that the abolition of the patent laws wholly, or partially, was desirable, institute some inquiry with the view of discovering, if possible, the best substitute for them in certain cases.

Mr. J. Howard thought that many of the arguments which had been urged on the present occasion touched, not the principle of a patent law, but the existing law and its administration. The great objections to the patent laws arose from the sham examinations made upon application for patents. The hon. and learned member for Richmond said that it was impossible for the law officers of the Crown to institute a proper inquiry; but, seeing that they received about £16,000 a year for that duty, it was desirable to know why they could not perform it. The difficulty in trying patent cases arose from the fact that the specifications were allowed to be drawn so loosely that it was impossible to say what was new or old in them, and if patentees were bound to grant licences on reasonable terms, the objection to patents on the score of being monopolies would at once fall to the ground. He would ask the House whether it was likely that the inventions of the steam-engine, the electric telegraph, and the screw propeller, to which the hon. and learned member for Richmond alluded, would have reached the perfection they had attained, without the protection afforded by the patent laws? The hon. and learned gentleman had also alluded to the important invention in regard to the grinding of corn, and had jumped to the conclusion that it could not have long remained undiscovered, but the fact was that the world had gone on grinding corn for ages without making the discovery, until it was hit upon by a man of genius like Bovill, who was afterwards worried to death by litigation. He repeated that the arguments which had been used tended not so much to the conclusion that the patent laws should be abolished, but that they should be amended. In the present day the workmen and manufacturers of this country had powerful competitors in other countries, and it would not be wise, by abolishing the patent laws, to take away a strong stimulus to invention. Not only should the means of study and research be thrown open to the higher order of inventors, but to working men, many of whom had a scientific turn, as was made abundantly evident to all who had visited the industrial exhibitions of working-men in London and elsewhere. When in Washington, some years ago, no building had made such an impression on his mind as the Patent Museum. It was so superior to anything of the kind in England that he felt almost ashamed of his country. It was, in fact, a great educational establishment, to which inventors and the public resorted for information. Every patent for which the United States had granted letters was not only classified there, but chronologically arranged; while in another spacious and beautiful gallery were all the rejected inventions, so that any one could go into that museum and trace the progress of every invention step by step. He could not help thinking that a similar establishment in England, whether with or without a patent law, would have a great effect on the national weal. A somewhat subtle distinction had been attempted to be drawn between the production of a book and a machine or other invention, but both appeared to him to have a common origin, and the author of the one had as great a right to the protection of the State as the author of the other. The noble lord who drew a distinction between a book and a machine said no two men ever wrote the same book at the same time, but he frequently found that two authors conveyed exactly the same ideas, though not in the same words, writing almost simultaneously. If two men, however, invented the same machine simultaneously, it was never found that they treated the details in the same way. The argument of the honourable and learned member for Ripon was untenable. He said the laws of nature were the common right of mankind. That would be freely admitted; and the inventor made use of the laws of mechanics just as the author of a book availed himself of the common language of mankind. The honourable member who introduced this subject said he would not withhold compensation from a meritorious inventor; but who was to be the judge of the merit and value of an invention? Hitherto the State had left this to be decided by a discerning and purchasing public, and he believed they would continue to do so. He should, as an inventor, feel it quite *infra dig.* to go, cap in hand, to the Chancellor of the Exchequer soliciting, or getting some powerful political friend to solicit him to recognise his claim for any invention. Inventors, from past experience, had quite enough to caution them against being left to any State department or official; they preferred to confide their claims for compensation to a discerning public. It was a scandal to former Parliaments that the patent laws had been allowed to remain unreformed. Inquiries had been made, and Royal Commissions had recommended certain reforms, but nothing, or next to nothing, had ever been done. We had the finest library of patented inventions in the world, and yet it was stowed away in a passage just 6 feet 3 inches wide. Could it be believed that such a state of things was allowed to exist, when there was so large a surplus of fees as £650,000, which ought not to be appropriated to the general revenue of the country, but to patent objects and the general advancement of science? He hoped, when the law-officers of the Crown did take this subject in hand, which he had some reason to believe they would next session, they would provide the means for a *bonâ fide* examination of all inventions before patents were granted. He would conclude by declaring his deliberate conviction that, if they wished to undermine the manufacturing and commercial greatness of England, they could not take any more effectual means of doing so than abolishing the patent laws.

Mr. Mundella wished the House to consider what would happen if the patent laws were abolished. He had been for 25 years connected with manufactures as an employer, and during that time he might say he had more than 20 patents, in every one of which he had a working-man in partnership with him. He had never made an invention in his life; he did not know in his neighbourhood of one invention made by an employer. Inventions were generally made by working-men; and a working-man now received from his hon. friend the member for Bristol and himself a third share of the profits of a patent invention which produced to him a very considerable sum annually. He had himself gone into a garret, where he found a poor man working on a circular revolving machine which he had fixed on the bottom of a wooden chair—the only chair in the room. For years he had been patiently working at it. It was completed. It was patented. He purchased it. The poor man had his share, and was now in comfort and independence. No parties had a greater interest in the maintenance of the patent laws than working-men, who, if they received no protection here for their inventions, would soon carry them off to France or America. He did not say whether patent laws were right or wrong; but he could not discover the distinction which had been drawn by the hon. and learned member for Ripon between a book and an invention, both being the production of the author's brain, just as much as the speeches of learned counsel, for which they were paid before they were given to the public. Every civilised nation in the world except one had a patent law. That the present law stimulated to useful inventions was abundantly proved by the hosiery machinery in the town of Nottingham, which was unparalleled in the world, and which had been perfected by the working men of that town. It was a great mistake to say that patents inflicted a hardship on the public. Patentees had found out that to attempt to keep a patent to themselves was a mistake, and that it was much better to grant licenses with as small a royalty as possible, in order to get a large number of them in use, and to enhance the consumption of the article as much as possible. He was himself the part proprietor of a patent which reduced by about one-half the price of an important article of clothing. Who had the benefit of this? The public got more than nine-tenths of the reduction, and the other tenth was divided into three parts, between the inventor and the two proprietors. There was the greatest difficulty in establishing the right to patents, and constant litigation and anxiety in maintaining them. All this pointed to a reform of the patent laws, for they were so vague, uncertain, and ambiguous, that it was never known whether a patent was secure. Sometimes, when it was known an invention was coming out, a man who had heard the nature of it described went off and patented the idea. He could not do that in America. There he must deposit a working model, and a committee of scientific men sat and declared whether it was a good and valid invention or not. The result was, that there were 11,000 patents in America, against about 2,000 in this country. Nowhere had so much been done to develop industrial inventions as in America, and this was mainly owing to the excellence of the patent laws in that country. He trusted that the House would consider the interests of the working-men, and revise the patent law, so as to give them a fair share in the products of their discoveries. The patents called "dog-in the-manger patents" ought to be prohibited, and some board appointed which should grant licences to work patents at a reasonable rate.

Mr. Stapleton said there were three classes of inventors—the master manufacturer, the labourer, and the man of science who made invention a pursuit. The first paid himself by keeping his invention secret, but the labourer, unless he had a patent law for his protection, would go unrewarded for his time and trouble. As to the third class, it was desirable that every man should pursue the course of life which would do the greatest good to mankind, and if he were likely to make discoveries, it was to the interest of society to encourage him in that career. He could not, therefore, agree to any proposal to do away with the patent laws. No doubt some more definite description ought to be insisted upon before a patent was granted. The time for which patents were granted might be reduced in certain cases, and a patent might be repealed at a fair valuation whenever it stood in the way of trade. It should be compulsory, moreover, upon a patentee to grant licenses. A great reform had, however, been effected in the law. Patent suits were now, to a great extent, carried into the Court of Chancery, and a claimant must set forth in a bill that he had a good patent, and show that there had been a distinct breach of it. If they did away with patent laws altogether, invention would be damped and discouraged.

Lord Elcho said, having listened to the discussion, he preferred the speeches of the hon. members for Bedford and Sheffield, because they took the most sensible and practical view of the subject. It would be unwise for the House hastily to adopt the resolution, and it would be better to inquire whether the patent laws could not be amended after the example of the United States. On the whole he suggested the propriety of postponing a decision on the question raised, until it had been thoroughly gone into.

Mr. Samuda doubted whether the inventors themselves were really gainers from the patent laws. If there were a manifestly new invention, he did not see why the inventor ought not to have the benefit of it, as much as an author who had written a popular book. There ought to be a full investigation into the patent laws, and if they were not abolished altogether, some power ought to be given to remove obstructive patents.

The Attorney-General thought that it would be premature to come to a decision on this important question, seeing that it was the first time the general principle of the abolition of the patent laws had been mooted in the present House. His hon. friend the member for Leeds would compensate inventors out of the public funds, instead of allowing them a monopoly; but he thought that part of his scheme wholly inadmissible, for everybody knew that it was impossible to estimate the value of an invention when it was first introduced to public notice, and he concurred with the noble lord the member for King's Lynn, that it would be extremely difficult for any public functionary to make a selection of patents, and if such an attempt were made, in nine cases out of ten the wrong invention would be subsidised. One great objection to the patent laws was, that they produced a crop of patents which were extremely inconvenient, and they had a race of inventors all running the same road, in the hope of striking out something which would result in making their fortunes. At the same time it would be a dangerous experiment to take away the stimulus to inventions; and therefore he was for continuing the present laws, but amending them, because on the whole he thought they did more good than harm. The House had before it the report of a Commission, the members of which comprised the names of Lord Stanley, Lord Overstone, Sir Wm. Erle, Sir W. Page Wood, Lord Cairns, Mr. Fairbairn, and other eminent men, and they unanimously recommended that a careful inquiry should be made both of the specification and a model before a patent was granted. He fully concurred in that recommendation, and also in another, that the tribunal should be improved, and that the jury should be dispensed with in the trial of patent cases—the trial to be conducted by the judge, assisted by one or two scientific men as assessors.

Mr. Denman considered that previous inquiries had failed because the principal witnesses were either patent agents or officials, and working-men inventors were entirely excluded. It was in the experience of every lawyer that the owners of patents were not inventors, but some great capitalists who had wit enough to see the value of inventions, and buy them at a cheap rate. He should like the government to promise that they would deal with the question early next session, it being fully admitted that the law was at present in a most unsatisfactory state.

The motion was then withdrawn.

THE ENDOWED SCHOOLS BILL.

This Bill consists of two parts. The first part contains the temporary provisions for the re-organisation, by commissioners, of endowed schools needing reform; the second part consists of permanent provisions for the appointment of an educational council, the examination of masters before their appointment to endowed schools, and the periodical examination of the scholars, and also of scholars in private schools, if registered with the educational council.

The Select Committee have presented to the House of Commons the first part of the Bill as a separate Bill, with the following amendments in it:—The list of institutions excepted from the operation of the Bill is increased by now including schools maintained wholly or partly by annual subscriptions, and having no endowment except school-house or residence; endowments for the education of ministers of any church or religious denomination, or for teaching any particular profession; and choristers' schools; but it has not been thought necessary to retain in this list colleges at Oxford, Cambridge, or Durham.

A new clause enacts that, in framing schemes under this Bill, provision shall be made, as far as conveniently may be, for extending to girls the benefits of endowments. The vested interest clause now proposes that in any scheme relating to an endowed school the Commissioners shall take into consideration the rights of patronage of any member of the governing body, in consequence of any donation made by him. The prohibition against interfering with modern endowments without consent is extended to endowments given within the last 50 (instead of 30) years; and the constitution of the governing body of Quakers' schools and Moravian schools is not to be interfered with, unless by consent.

The Conscience Clauses are not to apply to cathedral or collegiate church schools, nor to endowments which, by express terms (which have been constantly observed), require the scholars to be instructed according to the doctrines or formularies of any particular church or denomination. The clause enacting that in every scheme the Commissioners shall provide for the dismissal at pleasure of every teacher and officer in the endowed schools, adds, " with or without a power of appeal in such cases, and under such circumstances as to the Commissioners may seem expedient."

Some new clauses make provision for the apportionment of income in the case of mixed endowments, partly educational and partly for other charitable uses, the latter not to be diverted from those uses by the new scheme unless with the consent of the governing body. The clause relating to the application to education of non-educational charities does not now include loan funds, neither does it require the consent of the Charity Commission; but it requires the consent of the governing body, and it provides that, in applying such endowments to education, due regard shall be had to the educational interests of the class of persons now benefited by these funds.

In the part of the Bill relating to the preparation of draughts of schemes, it is proposed to provide that the governing body of an endowment exceeding £1,000 a-year may themselves prepare an original scheme or an alternative scheme to that of the Commissioners, to be by them considered, and, if required, submitted to the Committee of Council on Education. The power of the governing body to appeal to the Queen in Council against a scheme is extended to cases where they consider that it has not due regard to any educational interests to which the Bill requires due regard to be had, on the abolition, &c., of privileges to which a particular class of persons are entitled. A new clause provides that no new scheme of the Commissioners shall be submitted to the Committee of Council for approval unless two at least of the Commissioners signify in writing their approval of it; but in other respects one Commissioner may act under this Bill.

The Bill consists of 57 clauses, and disposes of that part of the subject-matter which occupied the first 52 clauses of the original Bill.

THE NEW LAW COURTS.

The following report (accompanied by plans) has been addressed by Mr. G. E. Street, A.R.A., to the Right Honourable the First Commissioner of Works:—

5a, Portugal-street, Lincoln's-inn-fields, May 24th, 1869.

Sir,—In compliance with your request, I have prepared two sets of plans, which I have the honour to send you herewith.

Three of these plans show how the proposed new courts of justice may be placed on the site selected for the purpose by you, and lying between the Embankment roadway on the south, Howard-street on the north, King's College on the west, and the Temple on the east.

The other two plans show how a building of similar contents might be planned, so as to occupy the site already purchased on the north side of the Strand, without any additional purchases of land whatever.

The adoption of the new site on the Embankment, or of the old site on the north side of the Strand (without any purchase of additional lands), would equally involve an entire alteration of the plan which I prepared under the direction, and which received the approval, of the Courts of Justice Commission. That plan depended entirely on my being able to widen Carey-street on the north side, and to alter the boundaries of Clement's-inn and Bell-yard. Without this power, for which additional purchases of land were absolutely required, my scheme was impossible.

In the case of both sites I may observe that as the area to be covered with building is so much smaller than was originally proposed, it will be necessary to omit many departments which were included in my former plans. On neither site would there be any possibility of finding space for all the offices of the Probate and Divorce department; and probably the Appellate Court, the Bankruptcy department, the Admiralty offices, the Land Registry and Middlesex Registry, or some of them, might also have to be omitted. It does not come within my province to suggest which of these departments should be included and which omitted, but they would be about the same on either site. I propose also to reduce the number of courts to eighteen in all, with the addition, if required, of a large spare court. The Court of Appeal would then have to remain in Downing-street, and there would be no provision for a Bankruptcy Court.

With these prefatory remarks I proceed to report upon the advantages which the two sites offer, and to explain the principal features of my plans, and for convenience I shall take the scheme for either site under the same heads, *seriatim*.

These heads will be—

(A.) Approaches to, and roads round the building, and character of surrounding buildings.

(B.) Light, quiet, and air.

(C.) Arrangement of building, involved by the nature of the site, and its surroundings and levels.

(D.) Advantages or the contrary afforded by levels of ground.

(E.) Advantages or the contrary from an architectural point of view.

PLAN FOR PLACING THE NEW COURTS ON THE THAMES EMBANKMENT.

(A.) The approaches to the building are shown on the accompanying block plan. They are many, and in every respect admirable. They possess the merit, which cannot be too much dwelt upon in the case of such a building, of being not only ample for the purpose, but also of being such as would, for the most part, be free from all noisy traffic, except that which is coming to the building itself. The Embankment roadway will probably never be a very great thoroughfare for carriages; but if it were, the space between the road and the front of the buildings, and the vast open space on the river side of it, would prevent the traffic ever being an inconvenience in the way of noise. The Metropolitan District Railway appeared at first to present a very serious difficulty, the station authorised by the Act of Parliament being opposite the centre of Norfolk-street, with a long opening above it for the purpose of ventilation and light. I am glad to be able to report, however, that all difficulty on this point seems to be capable of easy remedy. I have gone into the matter with the engineer of the railway, Mr. Fowler, who, at my suggestion, has prepared a plan showing how the railway-station might be moved to the bottom of new Essex-street, whilst the ventilation and light are provided for by two moderate openings in front of the south-east angle of the new courts of justice, and a third in the angle of the Middle Temple-garden. I have ascertained that there would be no objection on the part of the benchers of the Middle Temple to this concession of an opening in their garden; and I am of opinion that, with these alterations, the neighbourhood of the railway will do no great damage to the proposed building, whilst the convenience of having a station so close to it cannot be exaggerated. The station will also be more convenient for the public, being at the end of a fine new street, and close to the steamboat pier, which again will be most usefully placed, as affording excellent access by water to the new courts.

On the east side of the building it is proposed to form a new street, following to some extent the line of Essex-street; this will involve the purchase of the whole of Essex-street, and will enable me to deal with the gradients of the new street in the most convenient manner. A continuation of this street across the land already cleared on the north of the Strand would join Carey-street just opposite the end of Serle-street, and so form a junction with Lincoln's-inn-fields.

On the north side of the building an entirely new street would be formed. Howard-street would be widened by the purchase and alteration of the houses on its north side, and would be lengthened so as to be the whole length of the new building from King's College to Essex-street.

Finally, a street would be left on the west side of the building, opening under an archway to the Embankment, and continued as far only northward as Howard-street.

These streets would afford, on every side, admirable accesses to all parts of the building for the general and professional public. But, besides these, it would be possible to make use of two other modes of approach which might be most useful.

The first of those is the terrace carriage-road which already exists in front of Somerset-house. By a few trifling alterations this may be opened to the Waterloo-bridge road, and continued on to the angle of the new building, so as to give carriage access for the use of the judges very nearly to the level of their own rooms; and an entrance from the same terrace would give access, by a few steps down, to the attorneys' rooms and corridor below the judges' floor.

The other mode of access is not one which I can do more than throw out a suggestion for, but it seems to be worth mention, as indicating a mode in which the complaints of the separation of the courts from Lincoln's-inn, by the Strand, may, at any rate, to some extent, be met. You will have to re-sell the land purchased in Essex-street, and to pull down the houses for re-building; and it appears to me that, in doing this, it might be possible to set back part of the fronts of the houses behind open arcades, so as to afford communication with the north side of the Strand, by a bridge on the east side of St. Clement's churchyard, and, if thought desirable, by a tunnel at the same point. A passage might be carried at a level from the base of the north-east angle of the building, and as the difference of level between the Strand and Essex-street at this point is 14 feet, it might pass under the Strand roadway, and rise with steps to the level of the ground on the north side of the Strand. This passage would occupy the area in front of the lowest floor of the new houses east of Essex-street. At the same point, a bridge rising about 25 feet above the Strand would give access on the same level to the rooms and offices above the judges' rooms in the new building, so as to make them, in fact, very much more accessible than they would otherwise be. I make these suggestions in order to show that the position of the new building on the south side of that great thoroughfare, the Strand, may, if proper steps are taken, be so manipulated as to prevent any inconvenience arising to the vast number of lawyers and lawyers' clerks who will daily have to come to the new building from the other side of the Strand. The passage from the Strand bridge to the second floor of the new offices would be treated somewhat like one of the well-known "rows" at Chester, whilst the passage to the tunnel would be an open one, and the tunnel itself might have an opening opposite the end of St. Clement's Church for light and ventilation, without interference with the Strand traffic. It is important to observe that these means of communication with the new building would be really useful, without involving any ascending of staircases on one side of the Strand for the sake of descending on the other. All experience shows that people will not make unnecessary ascents of this kind; *but if you can* provide passages without such drawbacks, then they will use them, and so avoid the inconvenience or danger of the Strand crossing.

It may be as well here to say that the exact distance from the south-east angle of Lincoln's-inn-fields to the north-east angle of the proposed building will be 2 furlongs and 47 yards, whilst the distance from King's-bench-walk, in the Inner Temple, to the same part of the building will be 1½ furlongs. This north-east angle of the new building will be the natural entrance for barristers, and, if it is desired, it will be easy to make a bridge across Essex-street at this point, communicating with Fountain-court, Middle Temple. It may also be as well to observe that the distance from the south-east angle of the new building to the existing offices of the Probate and Divorce Court, in Doctors'-commons, along the Embankment roadway and the new road to the Mansion-house, will be as nearly as possible half a mile.

I say nothing as to the more distant approaches to the building. It is obvious that, where so many good and distinct modes of access exist, the more distant approaches will never be crowded by reason of the existence of this new building. The traffic will distribute itself—or filter, so to speak—into the Strand, and from thence, through no less than four practicable streets—Surrey, Norfolk, Arundel, and Essex-streets, to the Courts; whilst the Embankment-road, the railroad, the river, and the approach in front of Somerset-house will very largely assist in distributing the traffic equally to the various entrances all round the building. Distant alterations of approaches on the north side of Carey-street would not, therefore, be properly chargeable to the New Courts; they would be metropolitan improvements in the strict sense, and not a necessary consequence of the new building, which would, in fact, be only very slightly benefited by them.

I have always laid great stress on having the surroundings of such a building as the New Courts of Justice of good and harmonious character, and such as could not in any way affect the proper and convenient use of every part of it; and on this site they will be singularly good. On the south, we shall have the outlook on the finest river, I suppose, of which any capital in Europe can boast. On the east, almost the whole buildings will have the benefit of the Temple-gardens, and the distant sweep of the river to Blackfriars, and you will provide, no doubt, that the new buildings which will replace the existing Essex-street houses will be erected with strict conditions that they shall be in harmony with the new building, and confined entirely to the use of barristers or solicitors. So again, on the north side of Howard-street, and its prolongation, the whole property will pass through the hands of government, and whether the opportunity is taken to provide here for refreshment-rooms, for law-stationers and booksellers, or for chambers, it will equally be certain that the buildings need be in no way an inconvenience, or an eyesore to the occupants of the New Courts. On the west side, the prospect will not be so cheerful, owing to the singularly lugubrious character of the King's College buildings. But there will be nothing otherwise objectionable in it; the light will be good, and from the whole of the three upper ranges of windows it will be possible to see across the river to the Surrey side of Waterloo-bridge. To conclude, it is difficult, therefore, to conceive a public building being erected on any site in London with greater advantages in its surroundings than this site affords.

(B) What I have already said as to the surroundings of the new building bears to a great extent also on the quality of the light, quiet, and air which it will enjoy. But I may say that I have always maintained that, if the admirable light and air afforded by the river are to be made the most of, it must be by making some considerable opening into the heart of the building from the Embankment. With this view I propose to arrange the bulk of the offices to the east of the Courts round a spacious quadrangle, which will be open on its southern side to the river, so that all the rooms which surround it will partake of the vast advantages which the river side of the site affords. So, again, on the eastern and western sides of the site, owing to the position of existing buildings, the light and air will leave nothing to desire. On the northern side they will be the same as in all other London streets of good width, neither better nor worse. The whole of the site will have unusual advantages as regards quiet. There will be foreign traffic on one side only, viz., down Essex-street, but I suppose this would never be very great in quantity. And there would, no doubt, be some annoyance to the south-east angle of the offices from the passage of trains. This annoyance I have endeavoured to reduce as much as is possible, and it will not affect any other part of the building.

(c) The shape of the ground is so completely different from that which I had to deal with in making the previous plans, that I have had to re-arrange my whole scheme. My principle was, from the first, to separate the Courts from the offices by internal streets and quadrangles; and, in the plan approved by the Courts of Justice Commission, this principle was carried out as completely as possible. If it can in any way be accomplished, I am persuaded that this is the arrangement which will secure the greatest simplicity and ease in the use of the building, and cause the least confusion; and though I think it will be impossible to secure it completely on the Embankment site, I have still kept the same principle in view, and have adhered to it as closely as I could.

The broad feature of my plan now is, that I put the courts, central hall, and all the rooms for juries, witnesses, and the public to the western side of the site, and the great group of offices round a quadrangle to the east of it. But, as the upper and lower portion of the buildings which surround the central hall and courts would not be required for their use, I propose to provide some of the offices, as *e.g.*, the Vice-Chancellors' chambers, above and below the judges' rooms. They are so planned as to staircases and mode of access as, I believe, to minimise any confusion which might otherwise arise from their neighbourhood to the courts, and their position will no doubt be felt by the judges to be better than it would have been in my former plan.

The arrangement of the courts and rooms connected with them is substantially the same that it was in the plan approved by the Commission. In that plan I was always pinched for space between the Strand and Carey-street, and I was compelled, therefore, to make the small internal areas for lighting the rooms below the courts themselves smaller than I would have wished. I am able, in the new plan, to give a few more feet to each of these areas, and so to make a great improvement by putting the jury-rooms immediately under the courts, whilst I also improve the jury staircases and provide lobbies at the back of the bench to all the courts, as well as improve the light to a number of rooms and corridors.

I propose to give the public an entrance to the central hall in Howard-street, opposite Norfolk-street, and other entrances at its eastern and western ends. In this way every facility will be given for access to the courts which surround this hall, whilst it will not form a natural line of thoroughfare for people who have no business to transact in it. The public coming from the railway, the steamboats, or the Embankment will all enter by the eastern quadrangle. But, to prevent the annoyance which would be caused if this were used as a public carriage thoroughfare, I propose to make its pavement at two levels, divided by a terrace or flight of steps across the centre. Carriages then will be able to enter the quadrangle either from the north or from the south, but will have to return by the way they came.

A good deal has been said as to the access for the judges; and, as it has been held to be important that they should not have a great height to mount to their rooms, I propose to avail myself of the roadway already existing on Somerset-house-terrace for their benefit. They will probably always come to the courts from the Embankment roadway, and I assume that some carriage access will be contrived from thence to the western side of Waterloo-bridge, so that they will be able to drive or walk to an entrance only some ten or twelve steps below the level of their own rooms. Here they will have, as in my previous plans, a continuous corridor, entirely without disturbance by the professional or general public, whose staircases will not open into it. I can also provide a judges' entrance in Howard-street or on the Embankment, if it is thought desirable to have either of them.

The bar-rooms will, I think, be best placed to the north-east of the central-hall, where they will be most easy of access from both the Temple and Lincoln's-inn.

The detailed arrangement of the offices, to which I have devoted some months of continuous and earnest labour, and which had received the assent, not only of the Courts of Justice Commission, but also of almost all the heads of departments, will all require reconsideration and rearrangement. The knowledge which I have of the requirements of the various offices, and the plans already approved, will, of course, be of great assistance to me in making fresh plans. How far the amount of accommodation asked for is to be granted or curtailed will probably require some reconsideration, if the cost of the building is to be strictly limited to a fixed sum. But it is not out of place here to say that, soon after my appointment as architect to the new courts, I applied for the appointment of a sub-committee to go through all the provisions for rooms contained in the "Instruction to Architects," issued by the Commission, and that, with their assistance, the requirements were reduced by nearly 40,000 superficial feet. I believe that still further reductions may be made in some of the offices, and that it might be well to have accurate plans made of all the offices in which the business is transacted at present, so as to be able to judge fairly of the amount of enlargement which may properly be asked for and granted, with a view to facilitating the progress of business, and meeting the just requirements of the officials.

(D.) The slope of the ground from the Embankment up to Howard-street is rapid, and at first sight presented considerable difficulties, there being a rise of no less than 23 feet from the Embankment to the highest point of Howard-street. I have bestowed considerable pains on this part of the subject; and I think I see my way to using these levels, so as to make them rather an advantage than the contrary to the convenience of the building. In the first place, I have found it necessary, on various grounds, to give up the idea (which was propounded by the first promoters of the Embankment site) of raising the whole building upon an artificial substructure to the level of the Strand. The expense of such a substructure would be counted by hundreds of thousands of pounds, whilst there could be no compensating increase of convenience, but rather a great deal of inconvenience.

I have preferred to adopt the more common-sense plan of taking the levels of the ground as they are, and building to suit them. And the advantage of this course is, that I am able to make entrances at various levels, and so to give many offices the practical effect of being on the ground floor, which on a level site would have to use flights of steps up or down. Thus, I have ground-floor entrances on the Embankment, and at higher levels in Essex-street, and still higher in Howard-street and from Somerset-house-terrace. And if my suggestion of a bridge across the Strand is ever adopted, there will be the still further advantage of enabling people to go from the Strand to the upper part of the building, with an extremely moderate ascent of steps. I have marked the levels of the various streets and rooms on my block plans with the levels above the Ordnance datum line,* and I think a little study of these will explain better than words can, the levels of the principal parts of the building. The floor of the central-hall would be four feet below the Howard-street entrance, and about 15 feet below the Strand. The courts would be arranged, as to their level in relation to the hall, precisely as they were in the plans approved by the Courts of Justice Commission; and their floor would be 11 feet 6 inches above Howard-street (*i.e.*, exactly on a level with the Strand). The attornies' corridor would be 1 foot 6 inches above the Howard-street entrance; and the judges' corridor 8 feet 6 inches above the terrace entrance, and 15 feet 6 inches above Howard-street, supposing it is thought desirable to give the judges an entrance on this side, as well as at the south-west angle.

(E.) Before I thoroughly went into the question of a design for the Embankment site, I had not realised some of the advantages which it affords. It is true that I allowed, in the discussion on the subject at the Society of Arts rooms, that the Embankment site was preferable to that on the north side of the Strand, but I protested against the unfair disparagement of the latter site as it was proposed to be formed by means of additional purchases, and I pointed out how these had enabled me to design a building, which would not only be very convenient and very conveniently placed, but which would also, I hoped, be an ornament to London. At that time I had thought of the Embankment building as raised on a terrace like that in front of Somerset-house. I foresaw that my building would then rise far higher than Somerset-house, and that the suggestion made by some one to add a story to Sir W. Chambers' building was not one which I could ever endorse. I foresaw also considerable difficulty in planting my building on the curved line of the Embankment without danger of producing an unpleasant result. But in working out the plan to suit the site, I think, as is so often the case in architectural designs, that the very difficulties of the case have proved to be in the end its greatest gains. It is so difficult to do more than express an opinion in a report on such a point as this, that I have thought it best to make a rather careful drawing, showing what the effect of the building would be from a possible point of view. This drawing (which, as regards architectural detail, must, of course, be regarded as only a rapid preliminary sketch) is now before you, and I think shows how very great an opportunity the site offers for a very grand architectural composition, without the slightest sacrifice of the usefulness of the building. The somewhat irregular frontage of the Embankment is met by advancing the eastern end of the building, as near as the railway will allow, to the roadway. In this way I have contrived to make the general line of frontage of the new building very nearly parallel with the line of the Embankment wall. In front of my great quadrangle I have introduced what would, I think, be a striking feature—a grand circular colonnade. This circular arrangement is most convenient as giving a regular termination to the internal quadrangle, and also a regular line when viewed from the outside in connection with the curve of the Embankment wall and road. The irregularity of the frontage gives opportunity for extremely good effects of light and shade, on which above everything I lay great stress in a building of such long frontage; and it involves also a necessity for contrast with the front of Somerset-house, which I cannot but think is a fortunate necessity. In architecture, nothing is more effective than contrast naturally obtained. And I can conceive no less satisfactory mode of dealing with a building on this Embankment site, than any attempt to repeat the somewhat monotonous lines of Somerset-house in a building which, if it were designed and planned on the same system, could not be either in a line with it, or parallel with the Embankment wall, and must, therefore, offend the eye in every point of view.

One very great advantage which the building will have consists in the various points of view from which it can be seen. From Waterloo-bridge (from the farther end of which my drawing is taken) I find the view will be most admirable, because not only will the whole front be seen, but owing to the height of the bridge above the Embankment, the central-hall, rising above and behind, will also be well seen, and will have the most important effect in binding together and combining the general features of the composition. Again, anyone who goes to Hungerford or Westminster bridges, and notices the gap between Somerset-house and the Temple, will see at once how much such a space will be beautified by the occurrence of a succession of bold vertical lines, forming a varied sky line, an effect which I think the disposition of my plan will give very completely.

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* This is 14 feet below the level of the Thames Embankment roadway.

It is important also to say here that in the drawing I have made I have taken no liberties whatever with existing buildings. The space between Somerset-house and the new courts will be exactly as I have shown it, and an even better space for seeing the eastern side of the building will exist between it and the Temple library.

The top of the parapets of my building will be as nearly as possible level with those of Somerset-house, and the raised portions of my design—the central hall and the towers, will be so far removed from Somerset-house as not to affect it. On the other hand, by omitting a terrace in front of my building, I not only am able to utilise the whole of it, but at the same time my building gains enormously in apparent height.

The general line of frontage is advanced as far as the front of the terrace of Somerset-house. This is, of course, a great advantage to my plan, and does no harm, in my opinion, to Somerset-house. If the building were set back to a line with Somerset-house, it would be hardly at all seen by anyone coming from the westward, whereas, as I have planned it, one of the very best views would be obtained from this direction, and Somerset-house-terrace is so large an erection that it may properly be taken as the building line for anything which is built on this part of the Embankment.

Plan for Placing the New Courts on the Site between the Strand and Carey-street.

I proceed now to give a similar explanation of the plan which I have prepared to show how the already purchased land between Carey-street and the Strand may be used for the new courts of justice, without the purchase of any additional land whatever. In the instructions which I received from you to prepare this reduced sketch plan, you requested me to bear in mind that the ascent to the court level by staircases from the street must be of no greater height than would be the case on the Embankment site, and that the same facilities for carriage access, &c., must be provided on the one site as on the other. The plan I have prepared fulfils these conditions as far as possible, I believe, and may be considered under the same heads as that for the Embankment site.

(A) The obligation to confine such a building within the land already purchased is one which puts the greatest difficulties in the way of a satisfactory arrangement of the plan. It is perfectly obvious that no one can have sanctioned the purchase of such a site, with the impression that the purchases were to terminate with those which have been already completed. Nothing, as will be seen by my plans (where the boundary of the land already purchased is marked by a red line), could well be less convenient than the outline of the site, and no provision is made for the amendment of any of the buildings surrounding the site, or of the approaches to it. The difficulties connected with this subject were made apparent as soon as the competing architects were first of all consulted, and, after some discussion, they were finally informed that they might all assume that they were to deal with a site measuring 510 feet from north to south, and that they might make a give-and-take arrangement with the property on the western side of the site, so as to make its general outline rectangular. These directions turned out to be so vague and elastic that no two of the competitors dealt with exactly the same ground, though all of them without exception assumed that additional land would be purchased or obtained by exchange.

In order to provide approaches of some kind to a building on this site, it will be necessary to convert Bell-yard and Carey-street into wide streets, and to make entrances to the office quadrangles from Bell-yard and from Pickett-street. The Pickett-street entrance will be used by all vehicles coming from the west, Bell-yard by those coming from the east, and Carey-street by those which come from the north. The Embankment road and railway will send all their passengers up by Norfolk, Surrey, and Arundel streets to the Strand, and so on by Pickett-street to the courts. But I apprehend that the Embankment roadway would not be very much used for a building on this site, and that most vehicles would come to the courts from the City by Fleet-street, and from the west-end by the Strand. Some alteration of the block of houses between Holywell-street and the Strand, near St. Clement Danes, might be required, in order to make this access convenient; and no doubt the removal of Temple-bar would also be felt to be a very great gain, if it could be accomplished. On the north side there is more difficulty. Every vehicle coming to the courts from this side would of necessity come by Chancery-lane, by Serle-street, or by Portugal-street and Carey-street. All these are very bad streets. The narrowest part of Serle-street is 16 feet 6 inches between the foot pavements, and 26 feet 10 inches between the houses. The narrowest part of Portugal-street is only 18 feet between the houses, and 15 feet between the pavements, and at the junction of Portugal and Carey-streets there is a width of road of 15 feet, and a total width of 26 feet.

These dimensions are all such as to make some alteration imperative if any additional traffic is to be brought into these streets, as it certainly would be by the erection of the new courts on this site. Either Serle-street must be widened, or the road on the western side of Lincoln's-inn-fields must be prolonged southward until it meets Portugal-street, and the latter must be improved and widened until it joins Carey-street. This is not a metropolitan improvement so much as a necessary consequence of the erection of the courts of law on this site. So also, an opening from Holborn to Lincoln's-inn-fields, if not such an absolute necessity is still a necessity; for the building, if it is on the north side of the Strand, ought to intercept the northern traffic and bring it by way of the open roads of Lincoln's-inn-fields to its northern side, without allowing any of it to find its way unnecessarily into the Strand. On the diminished site no space could be sacrificed for a road from the Strand northward, and any such improvement must be made in connection with the streets which lead from the south-west of Lincoln's-inn-fields towards the Strand—such as Houghton-street and Newcastle-street. The plan put out by the Incorporated Law Society is entirely misleading. It shows a site, coloured yellow, which measures 500 feet by 465 feet (contents 5 acres, 1 rood, 433 yards), and a 60 feet road, going from the north side of St. Clement Danes Church to the narrowest part of Carey-street. Such a scheme is absurd on the face of it, and if the Carey-street site is used it must be in its integrity (such as that is), and without any such destruction of its usefulness as such a bisection of its area would involve. And, again, if such a street is to be made, it cannot stop short at Carey-street, but must be carried on to Lincoln's-inn-fields, and thence again, by an opening, into Holborn. This latter opening, however, and any improvement of the thoroughfare on the north side of Holborn, would be metropolitan improvements, and not, it appears to me, fairly chargeable to the Courts of Justice building.

Unfortunately, I have discovered that this map is worse than misleading; it is extremely incorrect. The object of the map is obtained by altering the eastern boundaries of the ground already purchased, and bringing them considerably nearer to Chancery-lane than they really are. And in order to do this, the whole block of houses from the Law Institution on the north to those which front the Strand on the south, is drawn of much smaller dimensions than it ought to be, *e.g.*, from the eastern side of Chancery-lane to the western face of the Law Institution, the Law Society's plan gives 135 feet. In reality, it is 180 feet. So, again, the distance from the south-east angle of Chancery-lane to the south-east angle of the purchased site is shown 105 feet, whereas, in reality, it measures on the ordnance map 145 feet. Again, the clear dimension from east to west between the houses in Bell-yard and the houses in Clement's-inn is shown 630 feet, out of which two 60 feet roads being taken, would leave an area 510 feet in length for building on. In reality, the exact length on the ordnance map between the two points is only 560 feet, which, if the proposed roads are deducted, leaves a building area of not more than 440 feet. Anyone may see that this alteration has been really made on this map by comparing it with my plan of the building on this site, or with the Parliamentary map of August 1st, 1845, from which it professes to be, but is not, accurately copied. It will be seen that, whilst the south-east angle of my building only projects about 10 feet to the east of Temple-bar, the yellow (or building) site on the Law Society's map projects 50 feet east of Temple-bar. The result of this examination of the actual dimensions of the ground is, that allowing the same depth from north to south that I have shown on my plan, viz., 470 feet, and allowing for the two roads east and west of the building, the site coloured yellow on the Law Society's plan, and described as containing 6 acres, would, in truth, only contain 4 acres, 2 roods, and 1,175 yards, As I have felt obliged to show the inaccuracy of this plan in regard to this site, it may not be out of place to say here that it is similarly inaccurate as regards the Embankment site; and that, curiously enough, the inaccuracy in this case makes the distance from the north side of Howard-street to the line of Somerset-house-terrace about 40 feet less than it ought to be, and so diminishes the apparent value and size of this site, in the same way that it increases those of the other site.

The surroundings of the building on this site were all of them provided for amply in the plan approved by the Commission, but every portion of them, except on the Strand side, depended upon the power to make additional purchases of land. If these purchases are not made under compulsory powers, I do not see how a public building can properly be placed on this site. The surroundings are, to a large extent, not merely poor, but of a very bad kind indeed. In Bell-yard the frontage is very irregular, and many of the houses appear to need rebuilding; but they are so shallow, having another court or alley behind them, that it would hardly be worth while to rebuild them, unless the whole block from Chancery-lane to Bell-yard could be purchased at one time. Higher up in Bell-yard is the Law Institution, which is now in course of being added to and raised a story in height. Its front is not parallel with the new courts, and I regret that the Law Society have not seen their way to making alterations in their building of such a kind as would make it harmonise with the new law courts, if they are built opposite to it. On the north side of Carey-street, east of Serle-street, the houses are not quite so irregular as they are in Bell-yard. They consist of shabby low buildings at the back of the houses in New-square. It seems that these houses are, each of them, divided among so many different owners, that it would be next to impossible to purchase them with any view to their improvement, except by the compulsory powers of an Act of Parliament, and it may be assumed, therefore, in the absence of such powers, that these houses would remain very much in their present condition, facing the new buildings. The case is very much the same as regards the houses west of Serle-street. Here a large number has been bought by a company with a view to rebuilding the whole block as offices, but many of the houses have not been, and cannot, I believe, be bought by any private company, and so, here again, the houses will, I presume, of necessity, remain in somewhat the same condition as at present.

On the north-west side, the buildings remaining formed one side of Yeates'-court. They are poor squalid houses, and ought undoubtedly to be purchased and rebuilt, or removed. On the south-west, the property all belongs to Clement's-inn, and there is an agreeable opening to the gardens of that inn and New-inn. Probably if the courts were built here, the authorities of Clement's-inn would build chambers facing the new building, and so give no reason for complaint on this side. But, on the other side, I feel bound to say, that unless in the exercise of a wise economy, Parliament would authorise the purchase of most of the property I have described, with a view, not necessarily to building on it, but to its resale, under strict conditions, as to rebuilding, it would not be wise to erect a public building on such a site; for I am quite certain, that, owing to its inferior character, if the building were placed here, it would, after all, have to be purchased when it would have much increased in value, and after the arrangement of the building had been interfered with to its detriment on account of it.

The judges' approach to this building would be from the north-west, *viâ* Portugal-street or Serle-street. They could then drive to a door very nearly at the level of their own floor. The barristers from the Temple and Lincoln's-inn could not have the bridges originally proposed for their use, inasmuch as I have had to lower the floor of the central hall, and with it the floors of the courts and other rooms. They would, however, all enter the bar rooms in Bell-yard. This entrance would be rather more convenient, of course, to Lincoln's-inn than to the Temple.

(B) In respect of light, air, and quiet, this site would not be so good as that on the Embankment. The Strand is so noisy as not only to affect all rooms looking towards it, but to make it impossible to allow of large openings in the south front for architectuaal effect or entrances. Carey-street and Bell-yard, also, will not be so quiet as I should wish to make them. In my former plan, approved by the Commission, I had not allowed Bell-yard to be a through thoroughfare for carriages, and heavy traffic in Carey-street would have been, to some extent, diverted by means of the bridge which it was proposed to make to New-square, Lincoln's-inn. In the absence of these precautions both these streets might be noisy. If it could be done without interfering with the rights of the old houses on the east-side of Bell-yard, I should still wish to put a bar across to stop traffic through it, but I doubt whether this could be done. The rest of the site looking towards Clement's-inn and Yeates'-court will be perfectly good as regards quiet, but it may be doubted how far the air coming from the poor neighbourhood of Clare-market and King's College Hospital will be good, unless some steps are taken to effect a clearance round the site.

(C) The instructions I have received, require me to provide as good an arrangement of plan, in regard to levels, light, &c., as that which I have provided on the Embankment site. This requirement would have involved a complete alteration of some portions of my plan, even if the reduced and irregular shape of the site had not made it absolutely necessary. It will be seen by referring to my block plan, that in order to get length of ground for the group of courts, central hall, and rooms attached, it is necessary to move them all up to the northwards, to that part of the site which possesses sufficient length to receive them. And in any case if the shape of the site had admitted of the courts, &c., occupying the centre, as they did in my approved plan, there would have been a great objection to their doing so, on account of the reduced width of the site, which would have made it necessary to reduce the internal areas so much in width, as very much to interfere with the amount of light throughout. And, I thought, also, that if on the Embankment site I provided an open quadrangle for the offices, I was bound to show how a nearly equally good arrangement might be provided on this site. My plan also provides the same increased width from north to south of the block containing the courts which I have provided on the Embankment plan, and consequently for the improved lighting and arrangement of many of the witness and jury rooms, &c. The entrances to the central hall and courts will be at the east end in Bell-yard, and at the west end under a raised courtyard. The floor of the hall will be raised very little above the natural level of the ground, so that there will be as few steps as possible up to the courts from the Strand side. The bar room will be at the east end of the hall. The judges will be able to drive to their entrance at the west end, which will be as convenient in point of height as their entrance to the building on the other site. I have managed this by the construction of a raised courtyard at the end of the building, with a road rising very easily from the west angle of Carey-street. This entrance involves the necessity for the judges to arrive from the north; if they come from the south, which they probably would not usually do, they would have to ascend about 22 feet 6 inches from the entrance to the floor of their rooms.

The irregular shape of the western portion of the site makes it very difficult to use it satisfactorily. I have shown on my block plan how it might be used so as to make the most of the land, and at the same time to admit of fairly good architectural arrangement, both for convenience and for effect. But even this arrangement brings the building into most inconvenient proximity to existing buildings.

In this plan it would be necessary to put offices above the judges' rooms. There would be a somewhat greater area occupied by offices, but, as far as I can judge at present, there would not be much difference in the available office room between this plan and that for the Embankment, owing to the greater height of building on the latter to which it would be possible to get convenient and easy access.

(D) If no more land is purchased, of course no alteration of any kind can be made in the levels of any of the streets surrounding the building. I think the levels may, however, be managed very well, though it will be impossible here to contrive any such scheme for facilitating the rise to the upper floors, as I have suggested on the southern side of the Strand; in most other respects the levels will be equally good. It will be impossible, now that the floor of the courts is lowered, to contrive any passage to them across the Strand, and a tunnel under it would involve the purchase of a considerable amount of property (which might of course be partly sold again) on the southern side of the Strand.

This site presents some æsthetical advantages which it would be very wrong to ignore. The elevation above the river is considerable. The entrances to the central hall would be exactly on the same level as the court-yard in front of St. Paul's Cathedral, and the floor of the central hall here would be 22ft. higher than it would be on the Embankment. To this extent, therefore, it would, in all distant views, rise higher and be better seen than on the lower site. And I think also the position would be an important one, crowning the hill opposite St. Paul's, and supplying what the views of London want, some very marked architectural feature in the long expanse of buildings between St. Paul's and Westminster.

On the other hand no near view could ever be obtained which would at all equal the view which would be had of a building on the Embankment site. The buildings facing the streets would all be so high as to shut in and completely conceal from sight the whole of the central hall and a great part of the towers, and it would only be at a great distance that these would ever be seen rising above the rest of the buildings. Again, it would be impossible in the Strand-front to gain anything like the fine effects of light and shade which could easily be obtained on the Embankment, and which are indeed a necessity there, if the ground is to be made the most of. In previous expressions of my opinion on this subject, I have spoken strongly of the effect of a great building crowning this eminence. I had in my mind when I did so, the vast extent of my plan as approved by the Courts of Justice Commission, including, not only the central hall and courts, but the great Probate Department, with its towers for the reception of wills, which, grouping with the other towers and lofty roofs of the building, would have given scope for great architectural effect. The reduction of the scale of building, the omission of the towers for wills, and the apparent certainty that the surrounding buildings will all be mean and unworthy of their position, if no more land is purchased, seem to me to make a vast difference in the view I am compelled to take, and to deprive this site of the claims I considered it had to be very nearly on a par with the other, in regard to the opportunities it afforded for erecting a building which should be a great architectural success, and an ornament to the capital.

I have now gone through the reasons which, it appears to me, are to be given for and against the two sites, endeavouring, I hope successfully, to treat the question in the most impartial and dispassionate manner.

On the whole, it appears to me that the Embankment site affords by far the best opportunity for a great work, now that the reduced scale of the building is accepted by the opponents to your scheme. I have found, I am bound to confess, that the more I worked at the plan for the building on the Embankment, the more it seemed to be possible to make the work one with which men of taste might be satisfied from an architectual point of view; and I have good hopes that, if the building is in the end placed on this site, it would be possible, in the way I have indicated, to make it so really convenient to all those whose business lies in it, as to involve no very serious sacrifice, if any, of the present use or asssociations of the great inns of court, or other centres of legal business.

I have the honour to remain, Sir,
Your very obedient servant,
George Edmund Street.

PARIS CATTLE SHOW AND AGRICULTURAL EXHIBITION.

The second general exhibition of fat cattle which has taken place since the establishment of the great market and abattoirs at La Villette, opened on the 22nd March. The number of animals exhibited was—232 oxen and bulls, 53 cows, 23 calves, 26 lots of sheep (ten in each lot), and 166 pigs. These numbers show no advance since 1858, but an immense one as compared with 1850, where there were exhibited only 72 head of neat cattle of all kinds, and 21 lots of sheep. It is remarked that the number of sheep is falling off in France, and therefore it is not very surprising that the number shown this year, although slightly exceeding those of 1868 and 1862, is otherwise the lowest since 1858, and below the numbers of 1851 and 1852. The number of pigs, on the contrary, progressed, almost without interruption, from 22, in 1851, to 127, in 1864, then fell gradually to 103, last year, rising this year to the unprecedented number of 166.

There were several supplementary exhibitions added to that of cattle this year, which added greatly to the general interest. First, exhibitions of live and dead poultry, rabbits, &c. The collection of the former numbered 345, and included fine specimens of every kind of poultry reared in France, rabbits, leporides, or crosses between the hare and rabbit, and again of crosses between the leporides and wild and tame rabbits. The exhibition of dead poultry, exhibited as prepared for market, was much smaller than those which have taken place in the heart of Paris in the winter season, but there was no falling off in the quality and appearance of the poultry, in which France certainly surpasses all other countries.

The exhibition of seeds, grains, and roots comprised about six hundred lots of all kinds, including, amongst other comparative novelties, several varieties of gigantic maize, such as caragua, horsetooth, and illinois, which are now being cultivated in all parts of France for forage, and in the south for seed or for grain for fattening poultry, and other purposes. Many well-known agriculturists report most favourably upon these varieties of Indian corn, which grow to the height of ten or twelve feet.

But the section which has a special interest in Great Britain at the present moment is that of the sugar-beet, which was largely represented at the exhibition in nearly all its forms and colours. Amongst others, we found specimens of a long kind of beet grown at Steene, in the department of the Nord, on a sandy soil, of which one hundred acres are sown with beetroot; each hectare, equal to two and a-half acres, receives, we are informed, fifty tons of farm manure, and rather less than half-a-ton of colza oil-cake, and produces from 45 to 48 tons of roots, or from 32 to 36 cwts. of seed. Other samples of the long kinds produced at Fortez, in the Aisne, on a clayey soil, and reported to produce on the average from 70 to 85 tons per hectare. Long sugar beetroot, with rose-coloured top, largely cultivated in the department of the Oise, and producing 60 tons per hectare. Of the more favourite varieties of sugar-beet, those with globular roots, the following are examples of those exhibited:—Yellow globe, sown in April on a calcareous soil in the Gers, and producing 30 tons per hectare; the same kind, grown in the Saône and Loire on a silicious clayey soil, produced, in 1868, only 35 tons per hectare, on account of the extreme dryness of the season; the same, grown on the same kind of soil as the preceding, in the department of the Creuse (the ground was cultivated in ridges, and received 90 tons of manure), produced per hectare, 40 tons of roots, and a half-ton of seed; a red globe beet, grown on a clayey soil at Salival, in the Meurthe, twenty hectares received forty tons of manure, and produced 55 tons of roots per hectare.

These particulars, furnished by the growers themselves, will give an idea of the productiveness of the sugar-beet from an agricultural point of view; the relative value of the roots depends of course on the quantity of saccharine matter contained in the beetroot, and this is said to be largest in the yellow globe, and in roots of moderate size.

Fine Arts.

PARIS ANNUAL EXHIBITION OF THE WORKS OF LIVING ARTISTS.

The doors of the Paris salon of 1869 were opened, as usual, on May morning, and the fifteen great rooms containing oil paintings were well filled, not to say crowded, during the whole day, while sufficient visitors were distributed amid the cool glades of engraving and architecture, and in the garden below, to have filled another good-sized exhibition.

The sculpture is placed as, with few exceptions, it has been for some years, in and around a garden laid out geometrically, and planted with charming flowers and shrubs by the Imperial Horticultural Society, which was to have a special exhibition there soon after the opening of the salon, and this garden, in which also is a fairly managed buffet for refreshments of all kinds, supplies a most grateful change from the hot glass-roofed rooms above. Still, even with this relief, a mere flying view of an exhibition containing more than four thousand works of art is a serious undertaking, and it would be rash indeed, from such a first view, to speak at all critically upon the collection.

All that is possible is to mark a few salient points. The central room is devoted, as usual, to official works, a few of the best of the large canvases, and a selection of the most remarkable cabinet works in the exhibition. The tempting Imperial prize of one hundred thousand francs has naturally caused the production of many very ambitious works, and the effect of this is to diminish the effect of the central room, for assuredly none of the large works now on its walls can be considered great enough to deserve the Imperial prize. The place of honour is occupied by a work of immense size—"Apollo and the Muses in Olympus," intended for the ceiling of a concert room attached to the great new theatre at Bordeaux, by M. Bouguereau; the chief figure, that of Apollo, the imperial group, and the Graces are somewhat wanting in dignity and beauty, but many of the figures in the foreground are drawn with a masterly hand, and show how well French artists study the human figure. Opposite to this work is a large one by M. Bonnat, "The Assumption of the Virgin," painted for the Lady Chapel in the Church of St. Andre, at Bayonne; a group of holy men are kneeling around a tomb while the Virgin rises above, supported by angels. Many of the kneeling figures are admirably drawn and draped, although the coarse naturalness of the hands and feet, a characteristic of this painter, rather detracts from the effect of the work. Unfortunately, as in M. Bouguereau's picture, the chief group is the least effective.

M. Courbet contributes one of the large canvases in this room; the subject is a stag hunt, with the snow on the ground, and probably neither the general composition, the colour, nor the drawing will add much to the painter's reputation.

The centre of the fourth wall is occupied by an immense picture, by M. Leullier, of the "Inundation of the Loire in 1866." A number of unfortunate people, many of them half naked, have sought refuge on the tops of the houses, and relief is arriving in boats. M. Leullier has not spared horrors, but he has failed to elevate them by sentiment.

The list of large compositions in this room is completed by two Scriptural works, one of which is "The Burial of Moses."

The most important work in the great room is "Lanjuinais at the Tribune of the Convention" (2nd June, 1793), by M. Muller. The orator has risen to speak against the acts of the Mountain, and the members of that section have risen and attempted to drive him from the tribune; Legendre even points a pistol at his throat, but the orator clings with desperate energy to the woodwork of the tribune, and finishes his speech amid indescribable uproar. This picture does honour to the artist of the famous work now in the Luxembourg gallery, "The Last Day of the Reign of Terror, or the Roll Call of the Condemned;" it differs from it entirely in sentiment, one being a scene of heart-rending despair and resignation, the other of the wildest, almost savage fury opposed to manly fortitude, but both are remarkable examples of acute observation and effective rendering of human passions, and both canvases are filled with life and expression. This is the only really historical work that we have yet found in the exhibition.

M. Viger presents one of his pretty drawing-room scenes of the First Empire, called "Les Loisirs de la Malmaison," with the Empress Josephine and Queen Hortense for the principal figures.

"A Fantasia in Algeria," by M. Fromentin, is another very remarkable picture. The Arabs are going through the Eastern military show, galloping wildly about, and firing their pistols in the air, till man and horse alike seem half-mad with excitement; the figures are small, but they are drawn with great vigour, and brilliantly coloured.

Gustave Doré and Mac Callum divide the honours of landscape in the great room; the former has an Alpine scene, "A Valley in the Bernese Oberland," and the latter, "A Summer Scene in Burnham Wood." Both pictures are sure to attract very considerable attention, owing to the high reputation of the artists.

We were sorry to miss Meissonnier and his son, Robert Fleury and his son, Rosa Bonheur, a confirmed absentee now, Hamon, and several other popular artists. M. Cabanel is only represented by two of his charming female portraits; Gérome has two works, one of which has for its subject "Ladies of the Harem in a

Pleasure Boat," a pleasing work, but in a lower key than most of M. Gérome's pictures. M. C. T. Frère has a remarkable work, called the "Simoon; Ruins of Palmyra."

M. Giraud, one of last year's prizemen, has a very clever work, "An Unfortunate Matador Mortally Wounded," who, while being carried from the arena, gives his fainting mistress the *deirsa*, or knot of ribbons from the bull's shoulder.

The sculpture is considered to be superior to the painting this year, but the correctness of this opinion may perhaps be doubted. There are, however, some admirable examples of the former, as for instance, "The Woman taken in Adultery," by M. Cambos; "Narcissus," by M. Holle; "Despair," by M. I. J. Perraud; and a coloured statue of "Cleopatra before Cæsar," by M. Clésinger, which attracts great attention and much discussion.

Brussels International Exhibition of Works of Art.—The dates of the opening and closing of this important exhibition are now fixed, the former being the 25th of July and the latter the 26th of September. As the title imports, the exhibition is open to artists of all nations. Works of art are to be addressed, "à la Commission directrice de l'Exposition des Beaux Arts de Bruxelles," and to be accompanied by a notice, containing the name and address of the artist and the entry for the catalogue. No artist is to be allowed to exhibit more than four works, but a number of drawings, miniatures, engravings, medals, &c., may be included in one frame. Oval, octagonal, or other works must, according to the usual rule on the Continent, be mounted on or within rectangular frames. Cases must be delivered carriage-free at the Belgian frontier, the Commission defraying all expenses both ways within the country. The 30th of June is the last day for the reception of works for exhibition, unless they have been shown at the Paris Exhibition, when they will be admitted, on previous notice being given, till the 10th of July. All the usual classes of works of art are included in the programme, the class of engraving comprising lithography and heliolithography. Photographs are not named. The jury of admission, following the practice of Paris, is to be elected by the exhibiting artists, and is to be composed of five painters (two at least of whom must have produced historical works), two sculptors, one engraver, and one architect, with the President of the Commission acting as chairman. The prizes are to be awarded by a jury, to consist of the admission-jury above referred to, with four additional members appointed by the government. The number of medals to be awarded is small, namely, five in painting, two in sculpture, one for engraving, and one for architecture, with three supplementary medals if the jury deem them necessary; but there are other recompences and inducements held out to artists. In the first place, the jury is to point out the works which they consider the State should purchase; and, secondly, sums of money, not less than 200frs. or more than 1,000frs., are to be awarded by the jury to young Belgian artists, by way of encouragement.

French Provincial Exhibitions of Pictures.—The number of works purchased at the Lyons Exhibition amounted to 105 in number, and the total of the money paid for them to £2,336. Amongst the purchases were works by Chaplin, Comte, Schreyer, Landelle, Mesdames Huet, Koch, and other well-known artists. The Roubaix Exhibition contains the relatively large number of 800 pictures, and the catalogue is full of well-known names.

Commerce.

West Indies Sugar Manufacture.—The *Produce Markets Review* says:—"We cannot but regard the public sale of a parcel of Barbadoes pieces, made in the island, as an important event; and apart from the question of the sugar itself, we are glad to have to report so very decided a step in advance as the establishment of a refinery in Barbadoes. The West Indies are evidently beginning to move with the times, and with their unrivalled advantages in soil, climate, and the flavour and quality of their produce, there can be little doubt that they have a splendid future before them. But to ensure it the change must be radical, and the whole of the antiquated system at present pursued must be thrown aside."

Cotton Supply.—The *Cotton Supply Reporter* for May 1st, says:—"The last American crop appears to have been overestimated, and is not likely to exceed that of the previous year. Will the next be larger, and may we reasonably calculate on more adequate supplies and lower prices next winter? If, as we are assured, last year's crop was worth 300,000,000 dollars, we do not need any stronger guarantee than this fact affords that there will be no falling off next season in the production of cotton. Accordingly, all recent accounts from the Southern States indicate the determination of the planters to make the most of their opportunities, and confirm the expectation generally entertained, that a very large area will this year be planted with cotton. We may consequently fully expect that the next crop will, at the least, be equal to either of the last two, and it is not unreasonable to anticipate some considerable increase. The American supplies have always the advantage of reaching the market before those from other sources come forward, and according to all present appearances they will realise prices amply remunerative. We cannot doubt, therefore, that in the Southern States no effort will be spared to produce as large a quantity of cotton as possible. But how will it be elsewhere; will the production be so great that, should America raise three million bales, the price must fall so far as to become unremunerative, and to discourage further exertion? We have no fear of this result; the demand will fully equal the supply; the effect of high prices is not to accumulate goods, but to keep stocks low; and as the raw material becomes more abundant, there will be an increased consumption. A larger production of cotton is an urgent necessity, and in India and America combined, in addition to Egypt, Brazil, Turkey, and other cotton-growing countries, there ought to be no difficulty in obtaining all the supplies that are required. The 'fertilisers' used with so much advantage in the Southern States will, it is hoped, be found not less beneficial in India; the soil needs enrichment, and if by means of the manure recently forwarded by the Cotton Supply Association for distribution in the Bombay presidency, the cotton lands there should be made more productive, and should yield a larger quantity per acre than hitherto, the result of the experiment will be an encouragement to further efforts thus to increase the growth of cotton in India. The improved quality of Indian cotton has begun to excite attention, and indicates a very gratifying degree of progress."

Colonies.

Statistics of Victoria.—The returns lately published of the year 1868 show that the total value of the exports was £15,593,990. There were 2,067 vessels, of 653,412 tons, entered inwards; and 2,172 vessels, of 684,207 tons, cleared outwards. The total value of goods transhipped was £593,307. The wool exported was valued at £4,567,182; gold in specie, £507,662; Victorian gold, £6,629,465; other gold, £1,213,732; and tallow, £160,909. Of the £13,320,681, of which the year's imports are made up, no less than £1,305,825 consisted of gold imported from New Zealand. The past was the first year in which such an item appeared among the imports. While there was a duty on the gold exported, all gold exported might be safely taken to be the produce of Victoria, as no one would import a commodity which he must re-export when he would have to pay export duty. But the gold duty ceased in 1867, and, therefore, comparing the imports of 1868 with those of former years, allowance must be made for this £1,305,000 of New Zealand gold, which really only came here *in transitu*, and did not belong to the general imports of the colony. Making this allowance, we find that the *bonâ fide* imports of Victoria in 1868 were valued at £12,014,836. With the exception of 1867, this is the lowest value of any year since 1855. For the last ten years imports have been as follows:—

1859	£15,622,891	1864	£14,975,815
1860	15,093,730	1865	13,257,537
1861	13,532,452	1866	14,771,711
1862	13,487,787	1867	11,674,088
1863	14,118,727	1868	12,014,836

Galena in Queensland.—A Brisbane paper says that the discovery of a galena mine in the Burnett district has lately created a considerable sensation in this colony. The lode in the ground is traceable for about 600 yards by the outcrop, the matrix being porphyry and limestone—minerals which are said to be always indicative of the probably abundant presence of silver. The continuity of the lode has also been proved by shafts, in some of which the vein of ore, at a depth of 30 feet, attains to the width of 14 inches. It is calculated that, in the present state of the works, two men can easily raise 20 tons of ore per week, but, with the investment of capital, this yield can of course be indefinitely increased, as there appears no limit to the resources of the mine. The ore already obtained is estimated to carry 100 ozs. silver to the ton. It is proposed to erect smelting works on the spot, so as to reduce the cost of land-carriage to a minimum, as well as to turn to profitable account the copper and other minerals with which the walls of the lode appear impregnated.

Mineral Caoutchouc in Australia.—The *Times* says that "recent communications from Adelaide, South Australia, have made known the discovery, in the southern portion of the colony, of a remarkable carboniferous substance, which, hitherto, has only been found in small quantity in the coal strata of Derbyshire. It is a "mineral caoutchouc," so called from its general appearance and some elasticity. In Australia it is found on the surface of the sandy soil, through which it would appear to exude from beneath, as, burnt off occasionally by the bush fires, it is again found after the winter season, occurring in quantity and of various thickness. Analysis proves it to contain 8·2, or more, per cent. of a pure hydro-carboniferous oil; its value for gas-producing purposes would, therefore, be great, and it is also believed to be applicable to the manufacture of certain dyes. The discovery is also important from its indication of the existence of oil or other carboniferous deposits beneath the surface."

Notes.

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Agricultural Cottages.—In a letter by Mr. Christopher Nevill, in the *Times* of the 26th May, that gentleman states that he has lately built, in the neighbourhood of Newark, a double cottage, as good as any labourer in one of our best-paid counties need wish to live in, costing rather under £170 per pair. The difficulty has been the three sleeping-rooms, but inasmuch as in practice it is found if half the cottages have three bedrooms, and the other half two, the supply is amply sufficient, he has devised a pair of cottages with five bedrooms, the middle one being thrown into either cottage, as required. Each cottage has half an acre of garden, and the rent pays five per cent on the cost. His bricks cost 22s. per 1,000. A plan and detailed account of cost may be obtained of Mr. Goddard, the architect, at Lincoln.

International Coinage.—The following resolutions of the International Decimal Association on International Coinage were agreed to at the last annual meeting:—1. That it is advisable, for international purposes, that a single standard for coins should be adopted in all countries, and that that standard should be gold. 2. That, for facilities of exchange, the degree of fineness in the standard should in all countries be nine-tenths. 3. That considering the extensive and growing use of the decimal system, and the time and labour which it saves in computations of money value and in all commercial transactions, the unit of money value in every country should be decimally subdivided. 4. That, in the opinion of the association, the greatest advantages would result to the country, if Great Britain were to join the Monetary Convention, concluded the 28th December, 1865, between France, Italy, Switzerland, and Belgium, by Art. 12 of which convention the right of accession is, under certain conditions, reserved for other States. 5. That, in the opinion of the association, in order to make the sovereign interchangeable for international purposes, it is desirable that the quantity of pure gold contained in it should be reduced to the precise equivalent of the gold piece of 25 francs. 6. That in order to bring the British system and the system of the Convention into closer contact, it is desirable that the sovereign so altered should be divided into 250 new pence. 7. That whilst recognising the increased facilities which would result by the establishment of a simple and clear relation between such leading units as the sovereign, the dollar reduced to the level of five francs, and the franc, the Council of the International Decimal Association, anxious to promote one common universal unit of money, strongly recommend to her Majesty's government to consider the advantage of adopting the 10-franc piece in gold, consisting of 100 new pence as before defined, as an international unit, and to submit the same for the adoption of the nations, parties to the Monetary Convention of December, 1865. 8. That it be recommended to her Majesty's government to take the necessary steps for convening or joining another International Monetary Conference, for the purpose of settling the details of a complete system of international coinage. 9. That copies of these resolutions be transmitted to the president and vice-president of the International Decimal Association in all countries.

MEETINGS FOR THE ENSUING WEEK.

Mon......Entomological, 7.
British Architects, 8.
Victoria Inst., 8.
Royal Inst., 2. General Monthly Meeting.
Social Science Assoc., 8. Dr Alfred Carpenter, "Influence of Sewer Gas on the Public Health, and the Theory of Ventilation as required in Sewers."

Tues ...Society of Arts, 11 a.m. London Cab System.
R. Medical and Chirurgical, 8½.
Photographic, 8.
Ethnological, 8. Sir Wm. Denison and Major Pearce, "On Indian Ethnology."
Royal Inst., 3. Mr. Emanuel Deutsch, "Semitic Culture."

Wed ...Geological, 8. 1. Rev. — Joass, "On the Auriferous Deposits of Sutherland." Communicated by Sir R. I. Murchison. 2. Dr. G. H. F. Ulrich, "Observations on the Nuggetty Reef." 3. Mr. J. J. Murphy, "On the Nature and Cause of the Glacial Climate." 4. Mr. D. Mackintosh, "On the Correlation, Nature, and Origin of the Drifts of N.W. Lancashire."
Architectural Assoc., 8.
Microscopical, 8. 1. Rev. J. B. Reade, "On a Method of Illumination by which the True Form of Diatom Markings is Discovered." 2. Mr. Jabez Hogg, "On Results of Spectrum Analysis."
R. Literary Fund, 3.

Thur ...Royal, 8½.
Antiquaries, 8½.
Zoological, 10.

Royal Society Club, 6.
Mathematical, 8.
Society of Fine Arts, 7½. Adjourned Annual General Meeting. 8½. Lecture by Mr. T. Page.
Fri ......Astronomical, 8.
Sat ......R. Botanic, 3¾.

Patents.

From Commissioners of Patents' Journal, May 28.

Grants of Provisional Protection.

Albums, &c.—1453—H. Ing.
Armour, mounting and working defensive—1497—T. Berney.
Beetroot, &c., treating—1486—J. H. Johnson.
Bicycles, &c., wheels, treadles, and breaks of—1463—V. de Stains.
Blast furnaces, &c.—1435—H. Bessemer.
Bottles, devices for securing corks in—1535—A. Van Winkle.
Bottles, washing, &c.—1472—C. Ferguson.
Bottles, &c., caps for the tops of—1550—W. M. Moore.
Bottles, &c., cases for—1482—H. B. Barlow.
Bottles, &c., capsules for closing—1536—W. R. Lake.
Cables, &c., lever fastening for—1465—J. Timmins and J. Gayton.
Carriages, propulsion of hand-power—1491—V. R. Batchelor.
Cartridges—1490—I. M. Milbank.
Cast-iron, treating—1391—C. D. Abel.
Cast-iron, treating—1409—F. C. Knowles.
Cloth, &c., damping and pressing—894—V. Chémery.
Coal vases—1521—F. Walton.
Cord tighteners for curtain fixtures—1558—C. C. Parker.
Cotton, &c., spinning, &c.—1500—R. Wilson.
Counterpanes or quilts, weaving—1478—J. and J. Kippax.
Cushions, mattresses, &c.—1423—W. Currie.
Drinking fountains, &c.—1477—I. and J. H. Storey, H. Lea, and T. Lane.
Driving bands, couplings for connecting together the ends of—1475—W. Cadogan.
Dyeing and printing—1421—C. Lauth.
Electro-telegraphic apparatus—1467—W. A. Lyttle.
Factory sliver cans—1509—W. E. Newton.
Feeding bottles, &c., valves for admitting air to—1468—T. G. F. Dolby.
Fire-arms, revolving—1510—W. R. Lake.
Fire grates—1499—R., J. J., and L. R. Bodmer.
Fire grates—1518—J. Waterworth.
Fluid meters—1401—E. Seyd.
Furnace doors—1412—H. Myers.
Galvanic batteries—1441—C. D. Abel.
Gas—1493—L. A. V. Dubourg.
Gas and water meters—1522—J. Woodward.
Gas pendants and chandeliers—1501—H. de Garrs.
Glass, securing panes of—1534—R. E. Keen.
Glass, &c., ornamenting, &c.—1495—W. Wilkinson and M. Boss.
Gun locks—1427—W. E. Newton.
Hay-making machines—1417—W. N. Nicholson.
Horse collars—1411—B. Hunt.
Horse shoes—1485—F. Hedley.
Horse shoes, &c.—1546—D. Roberge.
Hot-water boilers used for heating purposes—1503—R. Harlow.
India-rubber bags for the manufacture of felt hats—1516—C. Moseley.
Iron and steel—1431—H. Bessemer.
Iron and steel—1433—H. Bessemer.
Iron and steel, preserving—1562—J. McMillan and J. McGregor.
Iron and steel tubes—1524—J. L. Clark and J. Brotherton.
Juices, expressing—1461—A. V. Newton.
Kitchen ranges—1393—W. Bennett and J. Currall.
Knives and forks—1480—J. T. Griffin.
Lace—1507—T. Wright and I. Fox.
Lifting apparatus—1488—G. T. Bousfield.
Liquid soap—1277—J. Scharr.
Liquids, measuring—1471—J. Fawcett.
Locomotive engines and carriages—1519—A. M. Clark.
Looms—1504—D. Hitchen.
Machinery, working without fuel or labour—1261—J. Thompson.
Measuring distances, apparatus for—1566—J. P. Nolan.
Meat, &c., desiccating and preserving—1419—H. A. Dufrené.
Metal cans or tins—1505—A. Dunn and A. Liddell.
Metal plates employed for roofing, &c., securing—1520—G. Allan.
Metal screws, machinery for forming the threads of—1512—W. R. Lake.
Motive-power, obtaining—1333—A. Sleigh.
Needles—1514—A. Tatham.
Oils and fats, refining—1469—J. Townsend and P. Forbes.
Ornament for personal wear—1474—A. Friedmann.
Paper-hangings—1525—A. V. Newton.
Paper, manufacturing—1337—R. Craig.
Pens, penholders, &c.—1407—F. Leonardt and H. Hewitt.
Perambulators—1538—W. Martin.
Puddling furnaces—1413—E. Maybury, G. Matthews, and E. Marston.
Pumping apparatus, &c.—1405—J. Ramsbottom and T. M. Pearce.
Purses, &c., fastening for—1484—M. Wolfsky.
Railway breaks—1395—W. Galloway.
Railway breaks, &c.—1529—W. Naylor.
Railway carriages, working and applying the breaks of—1481—W. Finley.
Railway lamps—1508—S. W. Clark and W. R. Sykes.
Railway trains, communication in—1415—E. S. Copeman.
Railways—1487—C. E. Spooner and G. A. Huddart.
Railways, applying breaks on—1506—C. E. Brooman.
Railways, connecting and sustaining the rails of—1447—A. Vickers.
Roller blinds, &c., fittings for—1445—J. B. Payne.
Safes, &c.—1399—J. M. Hart.
Safes, &c.—1552—W. F. Fuller.
Saw teeth—1459—J. H. Johnson.
Secret votes, apparatus for registering—1526—E. C. Warburton.
Ships, &c., composition for coating—1464—E. V. Newton and P. M. Crane.
Ships, &c., constructing and propelling—1556—A. L. McGavin.
Shot, apparatus for concentrating—1479—C. W. Lancaster.
Signals and alarms, means for conducting electricity for communicating or transmitting—1564—T. Herbert and J. C. Fowler.
Smoke, consuming—1476—W. Stephenson.
Spirituous liquors, distillation of—1568—G. Johnston.
Steam, applying waste heat to the generation of—1326—E. Crowe.
Sugar cane, &c., extracting the juice from—1498—F. Kohn.
Sugar, drying—1511—W. R. Lake.
Tell-tales for omnibuses, &c.—1365—R. Wappenstein.
Threads, braids, &c., polishing—1437—E. Brennan.
Tobacco pipes—1403—D. and A. Posener.
Tobacco, steaming and compressing—1473—J. Bownes.
Umbrellas—1527—F. Johnson and W. Hatchman.
Urinals—1457—J. L. Greatorex.
Velocipedes—1299—J. Anderson.
Velocipedes—1397—J. Needham.
Velocipedes—1492—S. Corbett.
Velocipedes—1532—H. Livesey and T. Collison.
Velocipedes—1542—J. T. Lucas.
Velocipedes—1548—F. Zysel and O. Burdett.
Velocipedes, &c.—1389—E. N. Hudson.
Velocipedes, &c.—1533—J. Sawyer and J. Woodman.
Velocipedes, &c.—1544—A. W. Banks.
Vessels, propelling by means of water—1554—A. J. Dudgeon.
Water meters—1429—J. Withers.
Waterproof garments—1515—T. and J. Fagg.
Window sashes, &c.—1455—T. Bullivant.
Window sashes, &c.—1466—H. Luke.
Wool, &c., combing—1470—I. and G. Battinson and T. Whitehead.
Wool, &c., generating gases and chemical vapours employed in the manufacture of extract—1540—G. Martin.
Wool, &c., liquids for lubricating—1483—G. Felix, H. I. Axel, F. Bang, F. Roch, C. Monestier, and J. P. A. Figuier.

Invention with Complete Specification Filed.

Electric clocks—1560—A. A. Rossignolt.

Patents Sealed.

3637. W. Soper.
3652. H. A. Bonneville.
3664. J. Tidmarsh.
3666. E. Hely.
3668. H. N. Maynard.
3670. S. Pallant.
3676. L. J. Marechal.
3694. M. P. W. Boulton and J. Imray.
3693. W. G. Ainslie.
3697. F. Beech.
3715. A. B. Bérard.
3726. A. M. Clark.
3748. F. Meadows.
3817. J. T. Grice.
3863. E. P. H. Vaughan.
3871. J. Jones.
23. H. A. Bonneville.

From Commissioners of Patents' Journal, June 1.

Patents Sealed.

3667. J. Alexander and J. Hill.
3675. D. Dorrity.
3682. C. H. Chadburn.
3686. W. R. Lake.
3688. H. Robinson.
3689. S. Hirsch.
3691. J. H. Johnson.
3692. J. G. Rollins.
3696. J. S. Capelle.
3708. A. Masson.
3714. A. M. Clark.
3741. W. H. Pottle.
3749. R. Needham.
3753. A. G. Goodes.
3770. P. Kotzo.
3771. W. H. Bailey.
3797. W. J. Murphy.
3799. J. Hay.
3832. S. C. Lister.
3834. S. C. Lister.
3892. H. W. Hammond.
3896. J. Breeden.
3915. B. Norton.
3941. G. T. Bousfield.
83. J. H. Johnson.
147. J. B. Whitehall.
171. H. W. Hammond.
284. J. H. Johnson.
375. C. D. J. Seitz.
491. F. J. Knewstub.
623. W. Simpson & A. Gardner.
690. W. A. Gilbee.
874. G. T. Bousfield.
946. G. T. Bousfield.
1136. J. H. Johnson.

Patents on which the Stamp Duty of £50 has been paid.

1466. J. T. King.
1467. E. Bevan and A. Fleming.
1471. J. D. Whelpley and J. J. Storer.
1475. D. Thomson and W. Porter.
1526. W. E. Newton.
1505. W. Bayliss, jun.
1506. H. Schofield.
1507. G. T. Bousfield.
1491. J. Hall.
1492. J. D. Whelpley and J. J. Storer.
1493. J. D. Whelpley and J. J. Storer.

Patents on which the Stamp Duty of £100 has been Paid.

1637. A. Gilbey.
1653. W. E. Newton.